■THE GREAT OIL HUNT • HOT RETAILERS • EXECUTIVE MARRIAGES■

SEPTEMBER 24 1990

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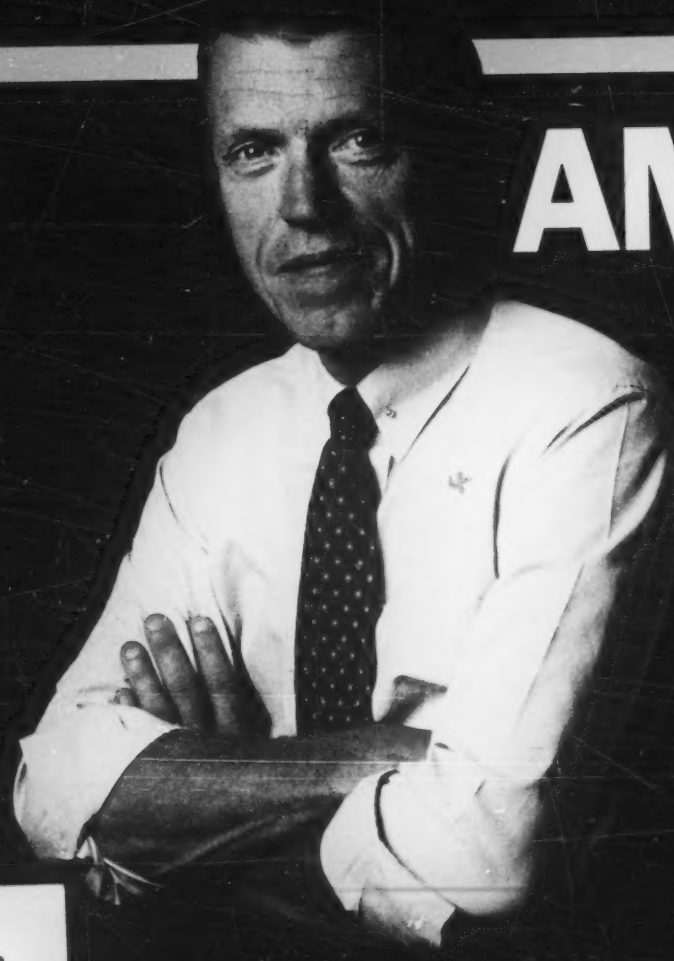

AMERICAN TAKES ON THE WORLD

How CEO Robert Crandall is turning the biggest U.S. airline into a tough global competitor

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FORTUNE

ABOVE: Will van Overbeek's camera took in this A-300 Airbus flight simulator at the American Airlines Flight Academy in Fort Worth.

COVER: American Airlines' Robert Crandall, photographed in an executive conference room at corporate headquarters in Fort Worth by Kent Barker.

"The mantle of U.S. flag carrier is passing to airlines like American. I just wonder if they are flexible enough to cope with brand-new situations." PAGE 40

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With tough guy Robert Crandall at the controls, this airline has soared to the top of the U.S. industry. Next, the workaholic CEO believes, American must accelerate its drive into the rich overseas markets. Now that the traditional U.S. flag carriers abroad are in decline, Crandall is winging into the void by acquiring a batch of promising new routes to Asia and Europe. *by Kenneth Labich*

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As growth stalls within the U.S., carriers from the world over are scrapping for share in global markets. *by Wilton Woods*

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In a rare interview, Budget Director Richard Darman—the most influential voice in the White House on economic policy—insists that his boss won't let the Persian Gulf crisis divert him from serious deficit cutting. But the President will try to trim less from defense and more from entitlement programs. *by Ann Reilly Dowd*

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IS 'MADE IN U.S.A.' FADING AWAY? 62

America is losing markets and selling off pieces of its economy to pay for its big import binge. To avoid becoming merely a branch-office colony of European and Asian owners, stripped of control over its national destiny, the nation is just going to have to make more things that people want to buy. *by Edmund Faltermayer*

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In this battered business, the gap between the successful and the merely surviving is widening every day. The winners, light on debt and spending heavily on growth, are succeeding by developing exciting merchandising programs and finding innovative uses for technology. *by Susan Caminiti*

"Japan will be the last country to share in a global economic recession if it happens."

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"The doctor said I should not be let out of the house—I'm just too dangerous."

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"Chances for passage are higher now for our proposals to increase business tax incentives."

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"The common thread among retailers doing it right is that they realize the customer is the one calling the shots."

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"The benefit of a wife with a significant career is that it relieves the husband of being the sole breadwinner."

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"Investment bankers and venture capitalists said, 'Golly, he's a nice guy, but what does he know about business?' "

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EDITOR'S DESK

LOUIS PSIHOYOS—MATRIX

Faltermayer sees the U.S. on a risky track.

AMERICA'S ABILITY to project military might abroad (and to enhance living standards at home) ultimately rests on industry's ability to manufacture nuts and bolts, missiles and computers, and myriad other necessities —independent of imports. Yet, as writer Ed Faltermayer shows in chilling detail starting on page 62, that ability is waning. In more than a score of key industries, U.S. manufacturers are losing market share right at home. Imports lead exports by so much that to pay the difference, the U.S. has been selling assets—including factories—at the rate of one Rockefeller Center a week.

Like a sandcastle at high tide, America's manufacturing base is sliding away. Unless changes are made in management thinking, public education, and tax policy, America risks becoming, as Faltermayer says, "a branch-office colony of European and Asian owners, stripped of top laboratories, decision-making jobs, and control over its national destiny."

Peter Petre, who edited the story, views it as an especially timely addition to FORTUNE's ongoing assessment of U.S. competitiveness. Says he: "Faltermayer, one of our wisest and most experienced writers, went at the subject with no preconceptions, and he is the first to admit that what he learned scared the pants off him." To find out where the U.S. is losing, where gaining, Faltermayer and reporter Sandra Kirsch interviewed well over 100 sources. The consensus: Though the U.S. has lost battles for important markets, it can still win the economic war. And Faltermayer tells how.

SHONNA VALESKA

Connelly: surprised so many husbands talked

On the domestic front, senior editor Julie Connelly—fresh from supervising our billionaires package in the last issue—writes about executive marriages, starting on page 129. She goes inside the mind (and heart) of management to determine how male managers are adjusting to marriages in which their spouse's career may outshine their own. Books and articles have plumbed the inner lives of women, but almost none have focused on the men they marry.

"I've wondered for years how men were feeling about dual-career marriages," says Connelly. "The media seem to listen only to extremes—either to Phil Donahue or to male chauvinists—not to the majority of men in the middle."

At first she worried that men might not want to talk about their feelings. But after she and reporter Laurie Kretchmar had conversed with more than 70 people, including wives, management professors, psychologists, personnel managers, and 35 husbands, Connelly knew better: "I was surprised how willing the men were to speak. Their attitude seemed to be: Thank goodness someone finally asked us."

Marshall Loeb

MANAGING EDITOR

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Experts say Saudi oil facilities such as this refinery in Yanbu are well shielded from Iraqi missiles and tanks.

DEFENDING SAUDI ARABIA'S OIL FIELDS

■ Since Saudi Arabia will increase its oil production to eight million barrels a day this month to make up for the lost flow from Iraq and Kuwait, the question is whether it can deliver if the bullets fly. The world's largest known petroleum reserve, the Saudis' immense Ghawar field, is only 250 miles south of the Iraqi front lines. Can it take a thumping and keep on pumping?

Probably yes, military and oil industry experts were saying in early September. The danger that an attack by Saddam Hussein could shut it down seems relatively small. Simply dropping bombs on a sprawling web of pipelines would not do serious damage, because the steel tubing is easy to replace.

To cripple Saudi production, the Iraqis would have to launch a precision strike on sensitive control centers at vital choke points. One of them is Abqaiq, where hydrogen sulfide gas has to be drawn off the crude oil before it can be pumped into the tankers waiting in the Persian Gulf. Replacing the control centers would be difficult. Says Henry Schuler of the Center for Strategic and International Studies in Washington: "Saudi facilities are so big they are one of a kind. You don't replace them off the sheif."

But Iraq probably lacks the ability to pinpoint those targets. American F-15s and F-16s would presumably be able to stop intruding Iraqi fighter planes before they got close enough to hit control centers with their Soviet- and French-made air-to-surface missiles.

A successful attack by Iraqi tanks appears equally unlikely. They would have to operate while under fire from ground forces that grow stronger daily and already formidable U.S. and Saudi jet fighters. Nor are terrorists likely to penetrate those well-guarded positions.

Iraq's most threatening long-distance weapon is the Scud missile, which can carry a 2,000-pound warhead for 400 miles or so. But the Soviet-made projectiles are so slow that U.S. Patriot missiles and planes have a shot at picking them off. Even if they get through the defenses, they are notoriously inaccurate. Says Anthony Cordesman, national security assistant to Senator John McCain (R-Arizona): "They can hit the right city, but that's about it." Luckily, Baghdad doesn't have the newer Soviet missiles or, worse, speedy U.S. Tomahawk cruise missiles, which have a 1,500-mile range and lock in their targets with great accuracy. **– Lee Smith**

WHERE ARE THE RISK ANALYSIS EXPERTS?

■ Ten years ago when upheaval in Iran captured world attention, many U.S. companies hired in-house experts—former government officials or academics—to guide them through the treacherous waters of overseas operations. Today you might think the risk-analysis teams would be working overtime. But except for those in major financial institutions and oil companies, most departments have been dissolved.

Many lost out to corporate cost cutting because they never generated profits and could show few concrete results. They were never sufficiently plugged in to the decision-making process to affect company policy. Says Stephen Blank, co-founder of the risk consulting company **Multinational Strategies**: "Instead of selling a service inside the company, they drifted in an academic direction."

Companies hire risk consultants now mostly for specific projects or incorporate them into planning departments. Notes Barbara Samuels, president of the Council for International Business Risk Management and a strategist at **Chase Manhattan Bank**: "If the guys running the overseas business know what they're doing and get analytical help, you may not need a special team." So if international managers are well versed in foreign cultures, keep close ties to headquarters, and have autonomy to act, a 1980s-style risk department may be redundant. **– Sally Solo**

CAREER TIPS FOR THE CLASS OF '94

■ As college freshmen agonize over whether to sign up for Renaissance Painting or 21st-Century Computers, they may take comfort in the fact that they've already made an important career choice just by enrolling. Jobs requiring an undergraduate education are on the rise, while the growth in students going for a degree is sluggish. (For a look at how the slowdown is hurting college finances,

JOBS FOR FUTURE COLLEGE GRADS

Occupations that will have the highest growth rates when the class of 1994 graduates

OCCUPATION	1994-98 GROWTH RATE		NUMBER OF JOBS
Medical assistant Excludes doctors and nurses	4.8%	1994	781,900
		1998	941,600
Lawyer/legal assistant	4.7%	1994	1,001,400
		1998	1,215,400
Systems analyst/ computer programmer	4.4%	1994	473,300
		1998	562,300
Electrical and electronics engineer	3.6%	1994	525,600
		1998	606,000
Teacher Primary and secondary school	2.2%	1994	1,193,600
		1998	1,303,200

SOURCE: AJS CONSULTANTS

WHAT LONGTIME CEOs MAKE VS. THE AVERAGE WORKER

WILL VAN OVERBEEK

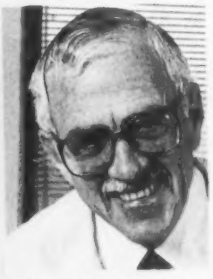
Darwin Smith
Kimberly-Clark
Compensation*
$1,289,333
Ratio to worker's pay
59:1

LOUIS PSIHOYOS—MATRIX

Thomas Murphy
Capital Cities/ABC
Compensation*
$1,830,000
Ratio to worker's pay
84:1

ANDY FREEBERG

J. Peter Grace
W.R. Grace
Compensation*
$4,345,000
Ratio to worker's pay
200:1


ALAN D. LEVENSON

Richard Eamer
Nat'l Med. Enterprises
Compensation*
$13,585,000
Ratio to worker's pay
625:1

*Annual average from 1987 to 1989.

see Education, page 103.)

Four years from now, these members of the class of 1994 may find the job search easier than it is today. Says Jon Sargent, an economist with the Bureau of Labor Statistics: "The oversupply of college graduates is closer to being eliminated than at any time since the 1970s." The BLS reckons that labor markets in the 1990s will be only "somewhat competitive," with an average of 1.95 million graduates annually seeking 1.8 million jobs that demand a college degree.

According to **AUS Consultants** of Philadelphia, which forecasts industry and job growth by analyzing economic and demographic trends, the eating and drinking industry will spawn the most new jobs (929,000) in the mid- to late-1990s. After that will be social services (596,000 jobs), nursing (479,000), and hospitals (418,000).

Among the professions, engineering and architecture are growing quickly. Between 1994 and 1998, another 248,000 jobs will be created in those fields. And yes, studying the law will still pay: Some 214,000 new positions for lawyers and paralegals will be opening up in the same period. **–S.S.**

LET THEM EAT BREAD

■ "You could call this the Marie Antoinette school of management," says leading compensation expert Graef S. Crystal. The Berkeley professor has discovered a growing gap between the pay of CEOs with long tenure and hourly workers. Crystal calculates that veteran chiefs typically earn 130 times the average U.S. factory worker's annual pay of $21,735, vs. 34 times as much 14 years ago.

Hefty increases in long-term incentives account for much of the increase. They include stock options and restricted stock, shares the CEO receives free but may not sell during a specified period. In the past three years these incentives have accounted for 57% of the total pay package of the veteran CEOs studied. The median package averaged $2.8 million annually. Fourteen years ago noncash compensation was only 13%.

For consistency, Crystal restricted his study to CEOs who had held their jobs for at least 17 years. Darwin Smith at **Kimberly-Clark**, who earns 59 times a factory worker's wage, ranked lowest among the nine CEOs studied. At the top was Richard Eamer of **National Medical Enterprises**, a hospital management firm, whose package was worth an average of $13,585,000 a year between 1987 and 1989.

In ancient times Plato suggested that the highest-paid person in a community should not make more than five times the lowest-paid one. But then, few CEOs in Plato's time got megastock grants. **–Kate Ballen**

DETROIT'S QUICK FIX: SELL TO FLEETS

■ With consumers hesitant to spend an average of $16,000 on a new car, U.S. automakers are depending more on fleet buyers such as rental car agencies, police departments, and corporations. In the first half of 1990, **General Motors**, **Ford**, and **Chrysler** sold 29% of their three million cars to fleets, up from 27% in last year's first half.

While fleet sales can keep auto plants running in a slow year and allow potential customers to sample new products, they can be very costly. To avoid antagonizing dealers, automakers buy back most of the rental cars. Then they resell them to dealers at a sharp discount, even if the cars are only a few months old. Auto analyst Maryann Keller of Furman Selz estimates that rental fleet sales cut Detroit's profit by an average of $1,800 per car.

Automakers insist that fleet sales are beneficial. Says Joel Pitcoff, manager of research and analysis for Ford: "In some cases we make more from fleet sales than dealer sales." Because of its ample interior and giant trunk, Lincoln's Town Car is especially popular; almost half of all Lincolns are sold to fleets (see table).

Honda, which sells only 8% of its cars to fleets, is a notable holdout against mass-merchan-

Lincoln Town Cars fill a Budget rental car lot in Chicago.

ROBERT KUSEL—SIPA

SELLING CARS BY THE GROSS

Fleet purchases* as a percentage of new car registrations

Brand	First six months of 1990	1989
LINCOLN	47	42
MITSUBISHI	34	15
GEO	33	18
DODGE	32	32
CADILLAC	31	26
CHEVROLET	31	31
PONTIAC	31	26
CHRYSLER	29	26
FORD	29	29
MERCURY	25	24
OLDSMOBILE	25	23

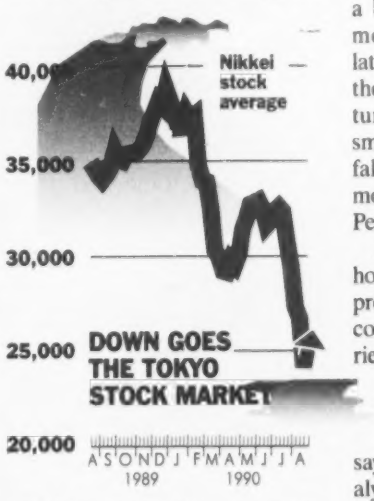
*Includes commercial fleets, government fleets, car rental agencies, and long-term leasing agencies.

For the Japanese in New York, home-style insurance forms and nurses.

dising. And **Sterling Motor Cars**, a U.S. subsidiary of Britain's **Rover Group**, lost so much money on rental cars in 1988 that it left the fleet market after one year. **– Mark Alpert**

JAPAN STAYS CALM—FOR THE TIME BEING

■ You wouldn't know it from the Tokyo stock market, but most Japanese are taking the Middle East crisis in stride. Yes, they expect oil prices to reach as high as $30 per barrel, pushing inflation up to 3.5% next year, vs. 2.7% now. And forecasts for economic growth in 1991 have been trimmed from 4.5% to 3.5%. But as Japan enters its fourth year of robust expansion, managers are not ready to give up on prosperity. To show their confidence, they expect to pump as much as 6% more into capital projects next year.



Why the optimism? Thanks to conservation, significantly more efficient industries, and nuclear power, Japan gets only 56% of its energy from imported oil today, compared with 76% in the early 1970s. The restructured economy is more resilient. Though exports will suffer as higher oil prices slow the U.S. and European economies, domestic consumption is expected to remain healthy.

While industrialists are calm, financiers are frightened. Banks may see profits drop 20% to 30% this year. The five-year balloon in asset inflation—including real estate—is deflating.

For Tokyo's stock market Gatsbys, the party is finally over. When the market staged a brief recovery in early summer after a sharp drop in late March, optimists thought the good old days had returned. Their hopes have been smashed by the market's 20% fall from its July high. (For more on the Tokyo market, see Personal Investing.)

Analysts expect brokerage houses to see a 60% falloff in profits this year. Weaker firms could be swallowed up in a series of mergers. "The Mideast crisis has brought into dramatic relief something that was already happening," says Simon Smithson, a top analyst at Kleinwort Benson in Tokyo. "The adjustment is proceeding at a hell of a speed, but it may be better to get it over with quickly." **– Susan Moffat**

ROCK OF AGES

■ The tiny Pacific island of Okinotorishima at the extreme southern end of the Japanese archipelago gives new meaning to the term "flyspeck." At high tide it consists of two coral rocks 10 and 16 feet wide.

Little Okinotorishima looms large to Japan. It stakes a territorial claim amounting to 154,440 square miles where Japan has exclusive fishing rights. Without it, the archipelago's southern extreme would be Iwo Jima or Oki Daitoshima, each about 375 miles closer to the main islands.

Three years ago the government decided to do something about the typhoon-battered island, which was eroding into nothingness. To save their molehill, the Japanese enclosed it in a mountain: a concrete ring with a seawall built of 9,900 steel blocks. None of the man-made materials could touch the natural formation because that would have made it an "artificial island" and unacceptable as a national boundary. After losing the island in 1945 and regaining it in 1968, the Japanese have now spent $200 million to save it—many times the annual revenues of the Japanese fishermen who ply the surrounding waters. **– S.S.**

Steel blocks and a concrete ring protect a tiny Pacific island from erosion.

MEDICINE WITH A JAPANESE ACCENT

■ In the beginning, there were sushi bars and interpreters at Tiffany's. Now more amenities are making New York City a nicer place for the Japanese: the 40,000 expatriates who live there, as well as the 250,000 tourists who visit annually. Among the latest is a medical practice for Japanese patients with two doctors and a bilingual staff at Manhattan's Beth Israel Medical Center.

Tokio Marine & Fire Insurance, one of Japan's biggest insurance companies, contributed $1 million plus technical support to Beth Israel for its efforts to serve the Japanese community. The giant insurer also co-sponsored a similar practice with a private physician in Los Angeles and plans to open another clinic in London in 1991.

In addition to employing Japanese staff, the medical group has tailored its procedures for its foreign clientele. Annual physicals include tests for stomach cancer, which is more prevalent among the Japanese. Results are prepared in both Japanese and English.

Even the paperwork has been designed with Japanese customs in mind. Says Robert G. Newman, Beth Israel's president: "There's something tremendously comforting and convenient in knowing you get the same darn forms." By year's end the New York City facility expects to see about 25 patients a day. **– S.S.**

TAKING OFF OVERSEAS

With growth stalled within the U.S., carriers from the world over are scrapping for share in global markets. ■ *by Wilton Woods*

THE FAST ACTION in the airline industry is happening mostly outside the U.S. While domestic travel barely budged, international departures lofted 11% last year, signaling a new era of global expansion not only for American Airlines but also for other aggressive carriers. The adjoining table ranks the world's 50 largest passenger airline companies by total 1989 revenues, measured in dollars.

In the booming Pacific, the number of passengers increased nearly 14%. Japan Airlines rode that tail wind to third place on this list, up from fourth last year. Hanjin Group, owner of Korean Air, also advanced one place, to 14th, but still seems hungry: In June it signed to buy 23 Boeing 747s, at $4.8 billion one of the largest aircraft orders ever. The U.S. carriers serving this region are fighting to maintain their share of the transpacific trade. United took the lead in that market this summer by doubling its capacity in the Pacific. Meanwhile, passengers flying from one busy Asian city to another may wait days for seats.

East meets West in an ever-shrinking world.

Within the U.S., six giants control more than 75% of the market. Looking for room to grow, all of these megacarriers—American, United, Delta, Continental, Northwest, and USAir—are mussing into Europe and Asia, adding new routes from their domestic hubs. Pan Am and TWA, once America's only international carriers, are slipping.

The old order is also changing in Europe, where the number of passengers rose 7% last year. The 12-country European Community has a flight plan for reduced regulation and increased competition by the end of 1992. Airlines there are buying smaller rivals where they can and forming alliances where they can't. Air France is building a fortress hub in Paris by taking over UTA, France's No. 2 international line, and Air Inter, the dominant domestic French carrier. Next door Lufthansa is buying 26% of East Germany's Interflug and will build a new hub in Berlin. Among the many carriers forming alliances is Swissair, which has swapped equity with Delta and Singapore Airlines.

Almost all of South America's government-owned airlines are up for sale, and passengers are praying for improved service. Local investors bought LAN Chile last year, and SAS subsequently picked up one-third of the stock. Spain's Iberia plans to buy as much as 30% of Aerolineas Argentinas in a pending deal. Sometime soon—*manana*, as they say—Venezuela's Viasa and Uruguay's Pluna will go on the block. The only line likely to keep its present structure is Brazil's 87% employee-owned Varig, Latin America's top carrier.

Next to privatize will probably be the airlines of Eastern Europe, starting with Interflug and Hungary's Malev. Perhaps one day even the U.S.S.R.'s gargantuan Aeroflot, which carries more passengers than any other airline, will follow. (This list doesn't include figures for Aeroflot or China's CAAC because their currencies aren't convertible into dollars.)

Unless Mideast tensions keep fuel prices sky-high, the surge in international flights should last for years. So many carriers have lined up to order Boeing's new 747-400s, which are designed for long-distance flights, that the company is writing orders for delivery in the year 2000. F

REPORTER ASSOCIATE *Michael Rockoff*

THE TOP 50 AIRLINE COMPANIES

Rank by revenues 1989	'88		Country
1	2	AMR	U.S.
2	1	UAL	U.S.
3	4	Japan[1]	Japan
4	5	Delta	U.S.
5	7	British Airways[1]	Britain
6	6	Lufthansa	West Germany
7	3	Continental Holdings	U.S.
8	10	NWA	U.S.
9	9	USAir Group	U.S.
10	8	Air France	France
11	11	All Nippon Airways[1]	Japan
12	12	Scandinavian Airlines System	†
13	13	Trans World	U.S.
14	15	Hanjin Group	South Korea
15	14	Pan Am	U.S.
16	16	Alitalia	Italy
17	17	Swissair	Switzerland
18	20	Air Canada	Canada
19	18	Iberia	Spain
20	19	KLM Royal Dutch[1]	Netherlands
21	21	Qantas[2]	Australia
22	22	Singapore[1]	Singapore
23	24	PWA	Canada
24	23	Cathay Pacific	Hong Kong
25	25	Saudia	Saudi Arabia
26	26	Varig	Brazil
27	28	Ansett Transport[2]	Australia
28	27	Thai Airways[3]	Thailand
29	29	Japan Air System[1]	Japan
30	30	Air Inter	France
31	34	China	Taiwan
32	31	Garuda	Indonesia
33	33	Hudson Place Investments[4]	Britain
34	36	Finnair[1]	Finland
35	32	Sabena	Belgium
36	37	Air New Zealand[1]	New Zealand
37	38	LTU	West Germany
38	35	UTA	France
39	39	Southwest	U.S.
40	43	Australian[2]	Australia
41	45	America West	U.S.
42	40	Alaska Air Group	U.S.
43	49	South African Airways[1]	South Africa
44	44	Aer Lingus[1]	Ireland
45	•	Austrian	Austria
46	42	Olympic Airways	Greece
47	47	Mexicana	Mexico
48	48	Air India[1]	India
49	•	El Al	Israel
50	•	Malaysian[1]	Malaysia

• Newcomer. † Half owned by governments of Sweden, Denmark, and Norway.

1989 REVENUES		PROFITS		TRAFFIC		COMMENTS
$ millions	% chg. from 1988	$ millions	Rank	Passenger miles in billions	Rank	
$10,589.5	20.0%	$454.8	3	73.5	1	American's parent. Its new service to 15 Latin American countries is a hit.
9,914.5	10.0	324.2	6	69.6	2	Endless buyout bids distracted management as United dropped to second place.
8,509.0	17.4	157.3	10	33.7	8	Went public in 1987. Owns stakes in Hawaiian Airlines and Air New Zealand.
8,089.5	17.0	460.9	2	55.9	3	Forged an alliance with blue-chip carriers Swissair and Singapore Airlines.
7,529.1	12.5	309.5	7	35.9	6	Kicked off the privatization movement in 1987. No. 1 in international flights.
6,941.2	3.0	56.8	22	22.5	12	Government owns 51%. Bought into East Germany's Interflug. Berlin bound.
6,768.7	(21.0)	(885.6)	47	50.4	4	Changed name from Texas Air after losing control of Eastern. Still mired in debt.
6,553.8	16.0	355.2	5	45.7	5	Owns Northwest. Taken private last year by an investor group including KLM.
6,257.3	9.6	(63.2)	41	33.7	9	Recovering from indigestion after swallowing Piedmont. Flies mostly short routes.
6,216.9	4.4	132.0	12	22.9	11	Government owned, and in no hurry to change. Buying France's UTA and Air Inter.
4,858.4	9.7	60.2	19	16.1	16	Onetime domestic carrier rapidly expanding service to the U.S. and Europe.
4,567.3	3.5	N.A.	—	9.5	26	Partners with Continental, All Nippon, Swissair, Thai, Finnair, and others.
4,507.3	3.4	(298.5)	45	35.0	7	Carl Icahn's aging, thirsty planes helped burn up his profits when fuel prices rose.
4,243.6	13.7	69.6	18	11.1	23	Owns Korean Air, plus ocean freighters and a large trucking company.
3,794.4	(8.9)	(336.6)	46	28.9	10	This debt-ridden dinosaur needs a merger—or a miracle. Biggest airline debtor.
3,734.2	14.6	(168.1)	44	12.9	21	Formed alliance with USAir and Spain's Iberia. Italian government owns 81.2%.
3,174.5	1.7	103.3	16	9.8	25	Straddling the world with powerful allies Delta and Singapore Airlines.
3,104.3	11.8	125.8	13	16.3	15	Sold to investors last year. Adding flights to Florida and Europe.
3,015.5	4.9	52.5	25	13.1	20	Already Alitalia's partner, Iberia is buying a stake in Aerolineas Argentinas.
2,938.9	4.1	184.2	8	14.9	17	Owns a chunk of Northwest's stock and plans to buy part of Belgium's Sabena.
2,665.1	18.1	144.3	11	16.5	14	Short of capital for new planes, Australia's carrier may have to go public.
2,295.8	15.2	494.7	1	17.9	13	SIA is the most profitable airline company in the world. Privatized in 1985.
2,252.9	27.7	(47.3)	40	14.7	18	Owns Canadian Airlines. Absorbed Wardair, which was Canada's third largest.
2,212.6	14.4	425.2	4	13.7	19	Remained highly profitable despite declining traffic to turbulent China.
1,910.1	12.5	(140.0)	43	10.1	24	Its policy is to provide air travel for pilgrims to Mecca, even at a loss.
1,862.1	21.6	10.4	39	8.6	28	Employees own 87% of the stock and provide the best service in Latin America.
1,743.9	32.7	108.0	15	4.8*	42	Half owned by Rupert Murdoch's News Corp. Ansett also has trucking lines.
1,683.8	17.9	182.1	9	11.6	22	Based in a red-hot region, this carrier has expanded at a sensational rate.
1,418.3	12.7	12.2	36	4.5	43	The third-largest airline in the world's fastest-growing air travel market.
1,356.5	9.5	18.3	32	5.3	39	France's domestic airline. Air France took control earlier this year.
1,246.4	20.3	115.6	14	6.5	33	State-controlled carrier. Faces competition from EVA, a privately owned startup.
1,232.6	11.6	N.A.	—	8.0	29	Indonesians haven't decided whether to privatize this government-owned carrier.
1,211.6	11.6	11.7	37	4.3	45	Owns Air Europe and Air Europa. Runs package tours. Adding scheduled service.
1,160.9	13.5	18.3	33	5.7	35	Its polar routes cut up to two hours off flights between the U.S. and the U.S.S.R.
1,146.6	4.9	18.0	34	4.2	46	Selling stakes to British Airways and KLM to boost Brussels as a hub.
1,108.7	9.0	46.6	26	6.6	31	Newly public. Sold stakes to AMR (7.5%), Japan Air (7.5%), and Qantas (19.9%).
1,094.4	13.6	N.A.	—	6.1	34	Privately owned package tour operator, expanding into scheduled service.
1,058.1	3.2	38.1	28	3.5	48	Was France's second-largest carrier until Air France took over in January.
1,031.7	22.6	71.6	17	9.3	27	A Dallas-based beneficiary of deregulation, flourishing beyond Texas's borders.
1,013.8	27.9	57.4	21	3.8	47	Government-owned domestic carrier, preparing to sell shares to the public.
1,004.2	29.5	20.0	31	7.9	30	Most successful of the post-deregulation startups. Australia's Ansett owns 20%.
929.2	14.1	42.9	27	4.4	44	Still working the same regional niche, flying up and down the West Coast.
912.2	(9.3)	55.9	24	5.6	37	Government-owned line is hurt by congressional ban on U.S. landings.
899.5	14.5	56.2	23	2.1	49	Flourishing in free-market competition on routes between Ireland and Britain.
850.5	9.7	11.6	38	1.5	50	Going public in gradual stages. All Nippon and Swissair have taken stakes.
785.0*	(2.2)*	(123.1)*	42	5.0*	40	Still government owned and notably inefficient. Not ready for 1992.
764.3	2.0	13.7	35	6.5	32	Privatized in 1988. Owners include Sir James Goldsmith. Buying 38 new planes.
745.4	1.2	28.1	29	5.6	36	New management at this government-owned carrier brought new profitability.
713.6	7.3	24.2	30	4.8	41	State owned. May sell a 49% stake to raise equity financing for new planes.
712.8	14.0	59.0	20	5.6	38	Government owns 60%. The Sultan of Brunei has a 10% stake.

* Estimate. N.A. Not Available. All figures converted to dollar using the average official exchange rate during each company's fiscal year.
[1]Figures are for fiscal year ended March 31, 1989. [2]Fiscal year ended June 30, 1989. [3]Fiscal year ended September 30, 1989. [4]Fiscal year ended October 31, 1989.

IS 'MADE IN U.S.A.' FADING AWAY?

America is losing markets and selling off pieces of its economy to pay for its big import binge. The nation just needs to make more things that people want to buy. ■ *by Edmund Faltermayer*

FEW AMERICANS worried when Asian imports took over transistor radios and calculators in the 1970s. The auto invasion that followed was different, for it struck at a symbol of national industrial prowess. Downright scary are foreign inroads into the high-technology sector, which once rang up big trade surpluses and helped offset deficits in the low-end stuff.

Is the U.S. manufacturing base melting away like sand castles at high tide? The charts on page 66 give a panoramic view of American industries in retreat on their home turf between 1979 and 1989. Those on technology's frontier took some of the worst beatings. A decade ago 94% of the computers bought in the U.S. were made in the U.S.; last year the figure was 66%. That doesn't even take account of a hollowing-out trend. An "American" computer workstation may be full of Asian parts. Other gadgets completed in the U.S. often embody assembly work by $6-a-day *maquiladora* employees just inside Mexico. And with 300,000 American flags imported from Taiwan and elsewhere in the first four months of 1990, you may wonder if *anything* will be made here in the future.

Japan, which last year outspent the U.S. for the first time on plant and equipment, could become the world's top industrial power by the year 2000 or soon after. Its manufacturing output, already more than two-thirds as big as America's, is growing faster. Meanwhile the U.S. is selling off assets to help pay for an excess of imports over exports, a red-ink figure recently running at the equivalent of one Rockefeller Center a week.

Some of the asset sales are foreign takeovers of manufacturing companies—reflected in the charts on page 67—which raise another question. Will the U.S. increasingly become a branch-office colony of European and Asian owners, stripped of top laboratories, decision-making jobs, and control over its national destiny?

Not since Sputnik have so many alarms gone off. Kenneth Courtis, a Tokyo-based economist for Deutsche Bank, warns that Japan is building "tremendous momentum. For America this is the make-or-break decade." The National Advisory Committee on Semiconductors warns that the U.S. is falling behind in chipmaking technology and that U.S. semiconductor companies may have to buy 70% of the next generation of production gear from Japan. A Commerce Department study warns that America's $200-billion-a-year electronics industry—a contender for tomorrow's huge markets in high-definition television and fiber-optic communication—could be overtaken by Japan's in the early 1990s.

REPORTER ASSOCIATE *Sandra L. Kirsch*

PHOTOGRAPH BY WILL MCINTYRE

How concerned should you be? The U.S., after all, remains far out in front in such important fields as aerospace, computer software, and medical instruments. Some studies show that American companies are holding on to their slice of world manufacturing when production at their overseas plants is figured in. Besides, all those imports have been a boon to consumers, who now have dozens of car makes to choose from as well as ever smaller camcorders for capturing baby's first steps. American companies may be moving jobs abroad, but foreigners are creating new ones by investing here, all in the healthy new spirit of globalism. Anyway, can't a predominantly service economy like America's leave much of the widget making to other countries?

The answer is no. In addition to undergirding the kind of military might the U.S. deployed in the Persian Gulf, manufacturing finances most of the R&D that brings material progress. According to Congress's Office of Technology Assessment, it also supports a lot of service jobs– 6.5 million of them in the mid-1980s, mostly well paid. When this is figured in, more than a fourth of all U.S. workers depend on factories for their livelihood.

"Postindustrial" America, though it may devote less of its activity to making things, has a growing fondness for *buying* them. Other government data show that the proportion of consumers' incomes spent on manufactured items other than food and fuel climbed from 16.4% to 18% in the seven years through 1986. Since that trend is unlikely to reverse itself, manufacturing offers the best hope of eliminating the mismatch in trade.

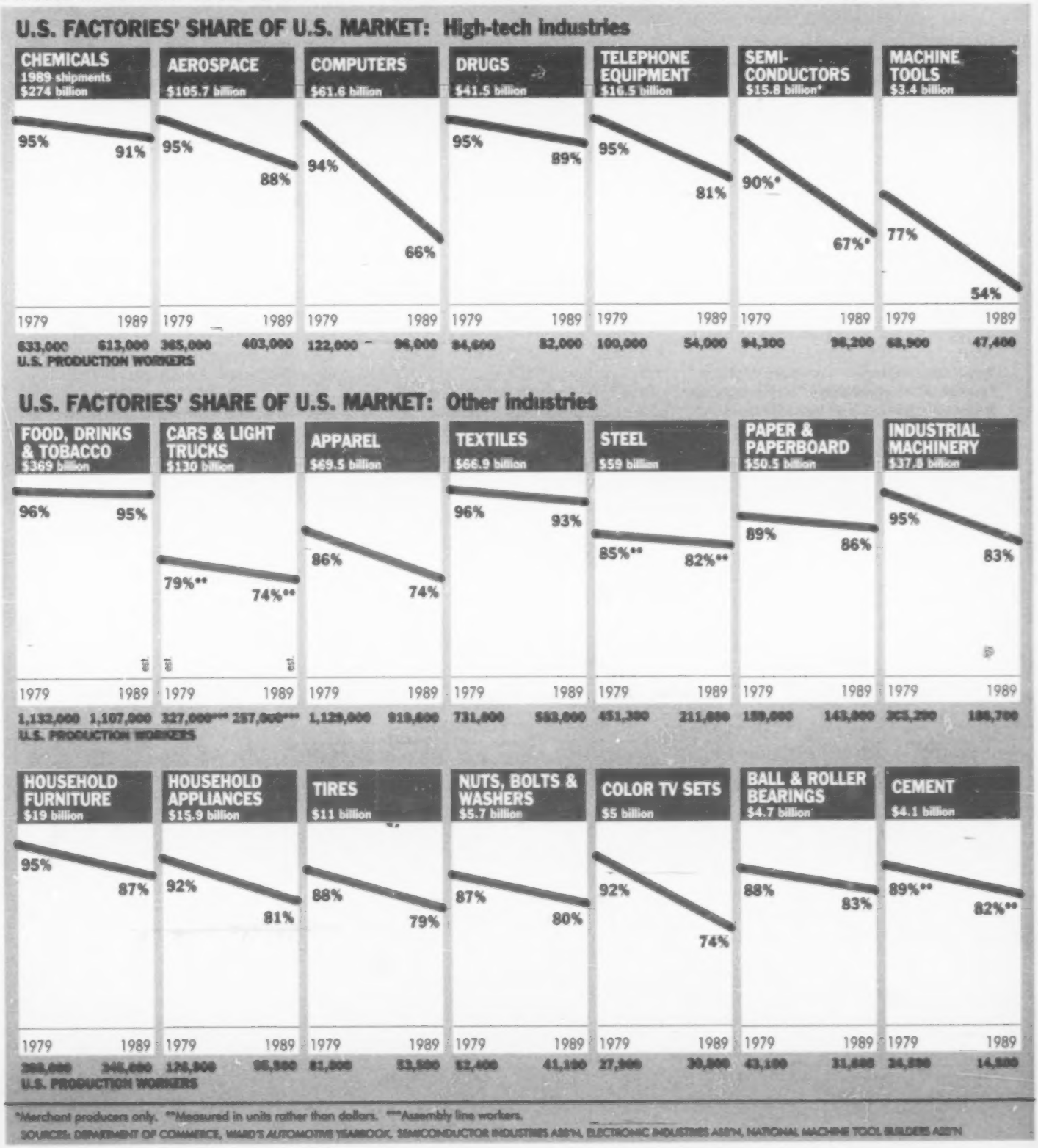
The U.S. slipped from having a trade surplus to having a huge deficit in manufactured goods during the 1980s. Booming services for foreigners—Japanese tourists visiting Disney World, Europeans watching U.S. movies—can't erase the gap. Last year the country came out only $20.5 billion ahead on all services. This was swamped by a $115 billion deficit in merchandise trade. To help settle its international accounts, the U.S. sold $72 billion worth of companies and real estate to foreign investors.

THE OVERALL current account deficit narrowed a bit in the first quarter. But a huge trade gap with Japan persists, and the annual oil import bill was running about $50 billion even before Iraq's invasion of Kuwait drove up prices. Short of heavy protectionism or a dwarf dollar, the U.S. can restore equilibrium—and stop the asset sales—only by making more *things* that people want to buy (FORTUNE cover story, May 21).

A major question mark hangs over all

Deficit fighters: The U.S. runs a trade surplus in "general industrial machinery," such as Ingersoll-Rand rock drills headed for the Soviet Union.

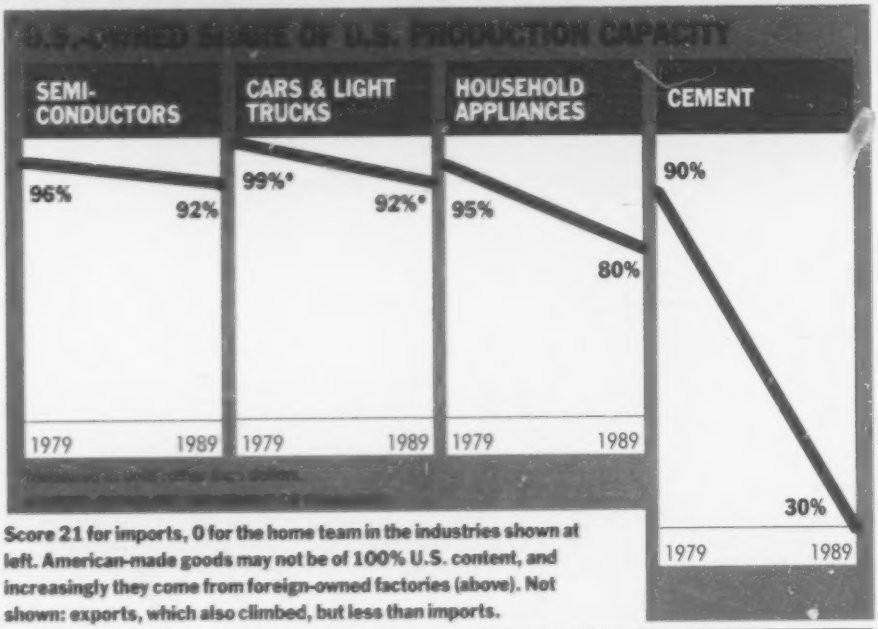
AMERICAN INDUSTRY HAS LOST GROUND TO IMPORTS...



*Merchant producers only. **Measured in units rather than dollars. ***Assembly line workers.

SOURCES: DEPARTMENT OF COMMERCE, WARD'S AUTOMOTIVE YEARBOOK, SEMICONDUCTOR INDUSTRIES ASS'N, ELECTRONIC INDUSTRIES ASS'N, NATIONAL MACHINE TOOL BUILDERS ASS'N

...AND FEWER PLANTS ARE U.S.-OWNED



Score 21 for imports, 0 for the home team in the industries shown at left. American-made goods may not be of 100% U.S. content, and increasingly they come from foreign-owned factories (above). Not shown: exports, which also climbed, but less than imports.

those foreign-owned U.S. plants. Depending on the sort of work that gets done under their roofs, they either sap or support U.S. competitiveness. Some are mere assembly operations offering only "screwdriver" jobs to Americans; the more skilled jobs and the R&D are back in Osaka or Paris. Japanese owners of American plants, in particular, have tended to keep R&D and the production of their most advanced products and key components at home. Says Robert Hayes, who teaches manufacturing at the Harvard business school: "Because of their culture, they resist moving away from the motherland."

In a recent issue of the *Harvard Business Review*, Todd Hixon and Ranch Kimball of the Boston Consulting Group describe four stages of foreign involvement in U.S. manufacturing. These range from assembly to "fully integrated business operations" embracing design as well as production. Only at the last stage, say Hixon and Kimball, do foreign investors truly enhance American competitiveness. Among the few examples they find are the U.S. consumer electronics operations of Philips of the Netherlands and Honda's burgeoning U.S. plants.

Honda, the most Americanized of the Japanese auto "transplants," has a production engineering department and builds drive trains here. By 1992, says Honda, the local content of its American cars will reach 75%. A study by Brookings Institution economist Robert Lawrence, conducted for an organization of foreign automakers and importers, says the transplants could significantly pare the trade deficit. By 1992 it could be as much as $15 billion lower than it would be if the cars made in these plants were imported. There's only one catch, as basic as Capitalism 101. Though transplants may pay U.S. taxes, hire U.S. workers, use U.S. parts, and even help swell the total of U.S. exports, the profits belong to foreign owners. For that reason they don't deliver quite as big a bang for the U.S. economy as comparable American-owned firms.

HOW DID the U.S. slip so badly in manufacturing? Guess who's easiest to use as a scapegoat. When Japanese producers dumped memory chips here in the mid-1980s, they battered their American competition. But T. J. Rodgers, 42, the feisty CEO of Cypress Semiconductor Corp., insists that America's problems are two-thirds its own fault. The title of his testimony to a congressional committee says it all: "The American Semiconductor Industry: Winners or Whiners?" U.S. companies, he maintains, are being "outmanaged" by the Japanese.

"We buy American whenever we can. But, sorry to say, the foreign proportion increases every year."

Other U.S. shortcomings are familiar: relatively high capital costs; a labor force ill-prepared by the schools; shortsighted CEOs, the reluctant generals in this war, who dodge confrontations with determined Asian adversaries because they are more interested in a quick 20% return on equity than in market share. John McConnell, CEO of Worthington Industries, says U.S. profit objectives are "not a hopeless disadvantage but a big disadvantage." For some time he has been calling the U.S. a "second-rate industrial power." At its new plant in Porter, Indiana, Worthington will install Austrian-made pickling equipment to clean steel before it is processed further. "We buy American whenever we can," says McConnell. "But, sorry to say, the foreign proportion increases every year."

Some made-in-America products are good enough to bet your life on. Ask a Japanese racing down the highway in a car equipped with an air bag from Cleveland-based TRW. The world leader in automotive restraint systems, TRW expects its sales of such products to hit $1 billion this year, up from $817 million in 1989. One ingenious move the company made several years ago to speed air-bag development: It brought top engineers from its aerospace divisions into a new department named Restraint U.

Innovative niche products aren't the only American success stories. Some industries, such as food and chemicals, are relatively intact. Even the rusty steel industry lately has taken on some sparkle, with help from voluntary restraint agreements (VRAs) that hold down imports. Among integrated U.S. producers who start with ore, man-hours per ton are now as low as Japan's. Meanwhile, the quality of American steel is up "markedly," says trade specialist William Lane of Caterpillar.

When manufacturers are faced with international competition, their knee-jerk solution is often spelled o-f-f-s-h-o-r-e. But moving production abroad to serve the home market makes sense less often than managers think. Hixon of the Boston Consulting Group notes that direct labor typically accounts for only 10% or so of a high-tech company's manufacturing costs: "From a purely wage-rate standpoint, there's

JIM HEINSTRA—PICTURE GROUP

The import blitz has spared food factories like this Sara Lee cake plant in Iowa.

no reason why you cannot make products in the U.S."

Much of the apparel industry has fled the country, but not Russell Corp. of Alexander City, Alabama. CEO Eugene Gwaltney, a long-term player if ever there was one, has invested lavishly on new equipment for making sweatsuits, sports uniforms, and other action wear. "We spent money when everybody else was laying back," says a spokeswoman. Ohio's Timken Co., which makes tapered roller bearings for cars and other machines, has no thought of walking away from U.S. production. It built a new plant in North Carolina ten years ago and is starting another in Virginia. Most of what Black & Decker sells in the U.S.—toaster ovens, food processors, Dustbusters, and power tools—is made here. Some items are exported. The company is counting on a North Carolina plant that turns out a new line of circular saws to cut it worldwide.

How battle-worthy are U.S. manufacturers for the 1990s? Here is a rundown on three essential industries:

■ **MACHINE TOOLS.** Brimming with orders a decade ago, the toolmaking business imploded in the 1980s. When backlogs were big and the dollar was strong, the Japanese and others moved in, offering fast delivery and abundant service. William Copeland of Copeland Economics, a consulting firm in Stamford, Connecticut, tells of a Japanese technician who slept on a bedroll at an American customer's plant for the first ten days after a new machine was delivered, the better to pounce if anything went wrong. Imports spurted from 23% of the market in 1979 to a peak of 49% in 1986 before slipping a couple of points.

The machine tool industry in Japan built an estimated $10 billion of equipment last year, three times the U.S. output. A good deal of what was made in America was produced by foreign-owned companies, some of which began expanding even before 1987, when the Reagan Administration imposed five-year VRAs on certain Japanese and Taiwanese machines. Mazak, the U.S. subsidiary of Japan's Yamazaki Mazak, the world's largest toolmaker, has just completed its fourth expansion since 1984 at Florence, Kentucky. Says Brian Papke, the second American to head Mazak: "This gives us the most productive machine tool operation in the U.S."

Some American companies are regaining customers. Last year Giddings & Lewis got half the U.S. orders for computer-run "flexible manufacturing cells," which carry out complex machining operations and can be changed over quickly to perform new tasks. James Geier, Cincinnati Milacron's new CEO, acknowledges that over the years his company "abdicated" much of its market share and wants to make a comeback. Teams called "wolf packs" are trying to hustle elaborate new machines into production. Milacron just sold $51.5 million in stock and intends to double its spending on product design and capital improvements over the next five years, to $250 million.

The machine tool industry in Japan built an estimated $10 billion of equipment last year, three times U.S. output.

When informed of this, Papke's boss in Japan said, "Is that all?" But don't write off the U.S. team. Eli Lustgarten, a Paine Webber security analyst who's keen on Giddings & Lewis, says American toolmakers still have a software edge. He foresees a surge in business in the 1990s as Detroit prepares to meet new fuel economy standards and to catch up in engines.

■ **COMPUTERS.** U.S. companies' share of the global computer market has slipped from 76% in 1984 to 64% in 1989, according to the Gartner Group, a market research firm in Stamford, Connecticut. But they still reign in nearly every segment of the business. In workstations they have an astonishing 65% of the Japanese market, says Dataquest, the Silicon Valley market research company. Chalk it up to superior design and the strength the computer industry draws from America's lead in microprocessor chips and software.

Those are companies. The dominance of the *country* as a computer factory is fading. One clue is a decline in U.S. production jobs, which a Commerce Department official attributes to increased outsourcing as well as greater productivity. Total U.S. electronics employment probably would fall were it not for the vibrant software industry, a portion of which statisticians count as manufacturing.

To see how international an "American-made" computer can be, consider the popular $8,995 SPARCstation 1 Plus from Sun Microsystems. Disk drives, monitors, and memory come primarily from Asia, reports vice president Kevin Melia. In order to figure out Sun's effect on the trade balance, you would have to subtract such imports from its $751 million of exports last year. Melia insists that the American content of his company's workstations—operating software, central processor unit, and some memory chips as well as R&D—is big enough to prod[illegible] a positive number.

IBM, bucking the trend, raised the American content of its personal computers when it introduced its PS/2 line. Motive: to make more money by using parts from the company's U.S. plants. Big Blue's new RISC System/6000 workstation is also heavily home-sourced. But the computer industry's manufacturing trade surplus has been sinking fast, from $4 billion in 1988 to $2 billion last year.

■ **SEMICONDUCTORS.** First the good news: The Pentagon does not yet have to beg Toshiba to sell it advanced memory chips. Japan's producers surged ahead in the mid-1980s, and as recently as 1987 held 98.6% of the world market for one-megabit dynamic random access memory chips, or DRAMs. (The statistic covers "merchant" producers and excludes companies like IBM that make chips solely for their own use.) This prompted Shintaro Ishihara, co-author of *The Japan That Can Say No*, to assert that his country could "upset the entire military balance" by selling to the Soviet Union instead of the U.S.

Japan's near-monopoly weakened after other countries ramped up one-megabit DRAM production. Dataquest reports that Micron Technology of Boise, Idaho, and other U.S. merchant chipmakers boosted their share of the global market to 12% last year. South Korea now makes the chips too.

The Americans' market share may keep rising. Lately Motorola has in effect acknowledged that keeping abreast in DRAMs may be the most efficient way to hone crucial etching and chip-production skills. Most U.S. companies abandoned DRAMs in the mid-1980s because they deemed them commodity products that would never be more than marginally profitable. Now Motorola is building a new $500 million plant in Austin, Texas, whose initial product will be four-megabit DRAMs. Micron, the only U.S. merchant DRAM-maker with no financial or technology-sharing ties to Japan, completed its third "fab," or production facility, last year.

At the summit of the semiconductor product mix, the logic chips that drive computers, the U.S. is still king.

AT THE SUMMIT of the semiconductor product mix are microprocessors, the logic chips that drive computers. Here the U.S. is still king. Intel is spending 80% of its $1 billion R&D and capital budget this year on microprocessors to maintain its No. 1 global position. Says CEO Andrew Grove: "We're outspending everybody else in the world."

Before you get too relaxed, consider this: Since the early 1980s the U.S. has run a trade deficit in chips, and Japan is now champ in many aspects of chipmaking technology. Says Michael Stark, research director at Robertson Stephens, a San Francisco investment banking firm: "The Japanese government has wisely targeted chipmaking equipment as a growth industry."

If chips are the lifeblood of the information age, equipment to make them is the jugular. Many U.S. equipment makers are struggling. Between 1983 and 1988, reports VLSI Research of San Jose, California, a market research firm, their share of the world market plunged from 69% to 50%, and it is expected to dip to 40% by 1993.

Joseph Parkinson, Micron Technology's CEO, says he hasn't yet found it necessary to buy equipment in Japan. Asked about prospects for the U.S. chipmaking equipment industry, he says tersely, "There's still a heartbeat, and it's viable." Micron is a member of Sematech, a two-year-old research consortium whose $200 million annual budget is paid for by the Defense Department and 14 chipmakers and chip users. Sematech's programs, which aim to leapfrog Japanese technology by 1993, have been running on schedule. But the equipment industry's weakness could hamper its work. Of 142 equipment and materials companies that originally signed up to work with Sematech, four have gone out of business. Another 43 have been acquired by foreign owners, mostly Japanese.

In today's interdependent, relatively peaceful world, is this something to worry about? Those who fear excessive dependence on foreign sources point to two tales of Japanese favoritism. According to one, supercomputer maker Cray Research was told by suppliers in Japan a couple of years ago that certain high-performance memory and logic chips were "not yet available for export," even though Cray's Japanese rivals were already shipping machines incorporating them. And last year Japanese companies allegedly got first crack at an advanced Nikon chipmaking device while U.S. competitors who wanted the equipment, reportedly including IBM, were kept waiting for precious months.

Cray denies the first story. IBM won't comment on the second, and Nikon insists it is untrue. But the mere fact that such tales are repeated, even in a congressional report on competitiveness, suggests a new uneasiness about carrying globalism too far. Significantly, Big Blue recently joined efforts to keep important parts of the equipment industry in U.S. hands. Together with five other companies, IBM backed a venture formed to buy a Perkin-Elmer chipmaking equipment division that might otherwise have been sold to a Japanese buyer. Such ef-

JACKSON HILL—SOUTHERN LIGHTS

Japanese-built embroidery machines help keep sportswear coming from Alabama's Russell Corp.

forts may not be enough. Peter Mills, Sematech's senior vice president, notes that in Japan and Europe, preserving and strengthening the semiconductor industry is government policy: "Japan has a strategy, Europe has a strategy, and the U.S. has a debate."

WHAT SHOULD government's industrial role be? The U.S. doesn't have to distrust its international partners to notice that they are all playing the same game: trying to get their share of leading technologies and the good jobs they bring. The Eurocrats in Brussels have launched five government-assisted megaprojects with acronyms like Esprit and Eureka to make the European Community a stronger player in semiconductors, software, and other technologies. South Korea has its target industries. Taiwan has cut taxes in half for a new chip plant. High tech is becoming as politicized as agriculture, with each country prizing white-clad workers in clean rooms just as it strives to keep farmers growing food.

A few efforts like Sematech aside, the Bush Administration has recoiled from anything with the faintest whiff of industrial policy. But if the U.S. team is playing without government help, isn't it like putting America's amateur bobsledders up against East Germany's heavily supported Olympic team in the days before the Wall came down? The best idea would be for all countries to abandon government meddling, as Bush's trade negotiators have proposed for world agriculture. Meanwhile, Washington cannot sit idle as factories close.

Deficit fighting is the first step, for it would reduce borrowing costs for American business, says C. Fred Bergsten, director of Washington's Institute for International Economics. Lawrence of the Brookings Institution doubts that America is de-industrializing. But he favors increasing the federal tax credit for R&D and has amended his views to support direct government subsidies for "precompetitive research." America is no longer "preeminent," Lawrence says, and "we can no longer take technological innovation for granted."

Government's biggest job, of course, is in the schools. Japan and West Germany have proven that a country with a superior labor force needs neither raw materials nor Lebensraum. It's a bit like the real estate man's classic rule about location. The way to keep American industry from being submerged in the rising tide of world competition is education, education, education. F

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THE NEW CHAMPS OF RETAILING

In this battered business, the gap between the successful and the merely surviving is widening every day. Winners are light on debt and spending heavily on growth. ■ *by Susan Caminiti*

THE WRECKAGE in retailing has piled up so high that you need to check every week to see who's in and who's out of business. Once-proud names—B. Altman, Bonwit Teller, Garfinckel's—have closed most of their stores, victims of too much debt and too little management skill. The Federated-Allied stable, including Bloomingdale's, A&S, and Jordan Marsh, is operating in the fog of Chapter 11, unclear about the future. Industry experts and suppliers are casting nervous glances at Macy's, struggling under its own burden of debt and caught up in the profit-destroying cycle of endless price promotions. Says Jerome Chazen, CEO of Liz Claiborne, a large supplier to many of these troubled chains: "I've been in this business for 40 years and this is the most disquieting time I've ever seen."

Now look who's rising through the debris: Home Depot, the Limited, Toys "R" Us, Wal-Mart, Dillard, the Gap, J.C. Penney, and Nordstrom are becoming the new rulers of retailing. They are succeeding by developing exciting merchandising programs, finding innovative uses for technology, and expanding smartly and aggressively. Debt for these market-share masters is a measly percentage of sales (see table). That gives them the financial strength to weather the hits and misses of the industry without jeopardizing the business.

Retailing is thus becoming an industry of big winners and big losers. Says Carl Steidtmann, chief economist of Management Horizons, the Price Waterhouse division that tracks the industry: "A widening gap exists between the high performers and the rest, between those retailers who have made long-term strategic investments and those who have made short-term tactical expenditures. And that gap isn't going to shrink."

The reason is a matter of cruel economics. For strong retailers, those long-term investments trigger a beneficent cycle of moneymaking: As sales per square foot increase, operating costs as a percentage of those sales decline. That translates into lower prices for customers, which in turn boosts sales, and the cycle starts all over again. For strapped competitors, declining sales per square foot means operating costs as a percentage of sales rise, making it more difficult to keep prices competitive or to offer the amenities that keep customers happy. Trying to remedy this problem by constantly putting goods on sale may move merchandise out the doors and up the cash flow, but it eats away at the bottom line, further compounding the problem.

A typical confrontation: Nordstrom is invading Macy's turf in New Jersey with a new

ANDY FREEBERG

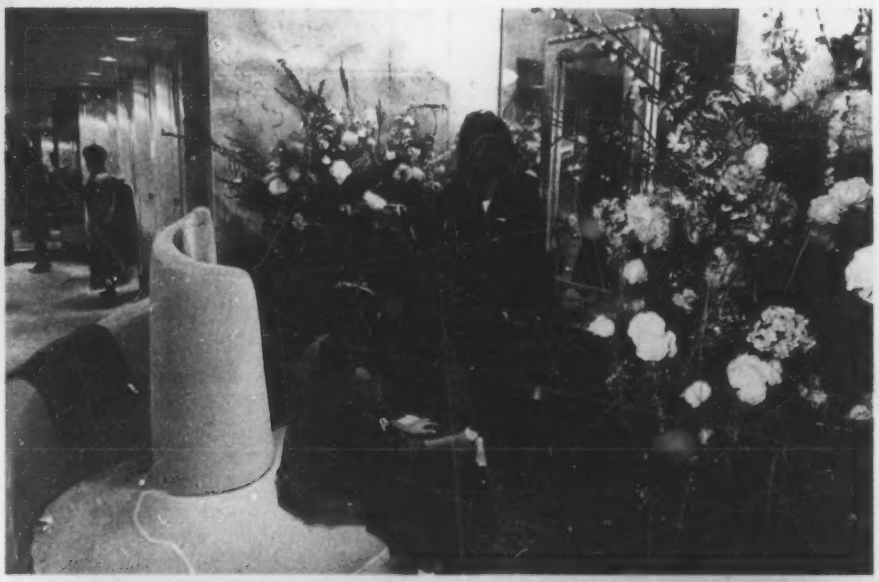
Home Depot CEO Bernard Marcus (left) and President Arthur Blank have increased sales 100-fold in ten years, to $2.8 billion. Part of their secret: simply refusing to diversify.

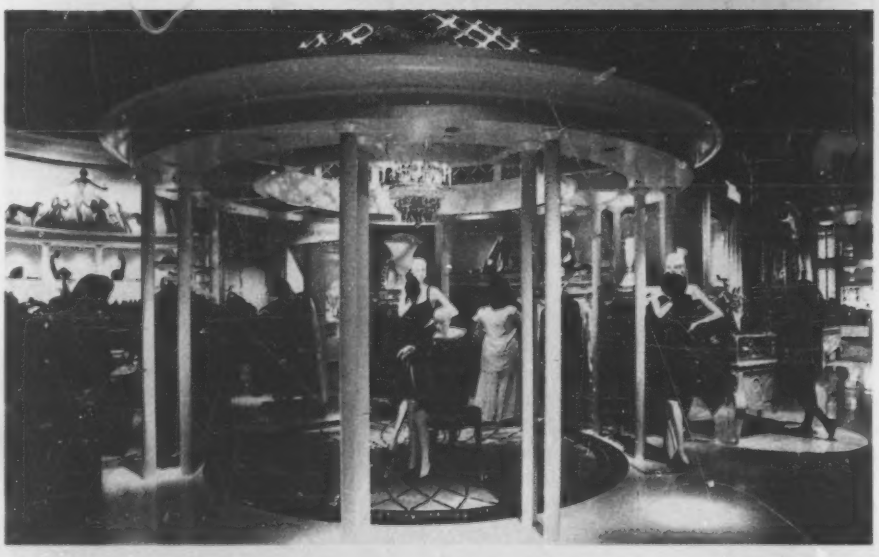
GEORGE LANGE

Under Leslie Wexner, the Limited caters to . . .

store opening this month. Bringing with it outstanding service and great selection—plus spic-and-span premises—the Seattle retailer will be competing with a Macy's that has trouble keeping some of its dressing rooms free of obscene graffiti and gum stuck to the walls. Or consider Sears, whose competitors are able to remodel old stores and map out strategies for entering new markets while it suffers by failing to slim down its bloated costs and figure out what it wants to be. Net income from the merchandise group fell 32% in the latest quarter.

THE EXECUTIVES leading today's retailing champions happen to be the ones who started the companies. They haven't forgotten the simple lesson of staying faithfully focused on their businesses. Home Depot, America's largest warehouse chain selling do-it-yourself products, has grown from four stores and sales of $22 million in 1980 to 126 stores ringing up $2.8 billion in 30 markets. Such heady expansion has been responsible for leading many a retailer into temptation, a sin Home Depot has carefully avoided. "In some cases we have 25,000 to 30,000 people walking through a store in a week, 50% of whom are women," says Bernard Marcus, the chain's co-founder and CEO. "We could sell them anything. If we wanted to put panty hose up at the front register, we'd sell a fortune in panty hose. But we don't. We don't want the customer to think we're a discounter, a food store, a toy store, or anything else, because it would confuse her. The perception of the customers always has to be, when they think of a do-it-your-





ANDY FREEBERG (3)

. . . the budget-conscious at a lush Lerner's in Manhattan (top), chic shoppers at a new Henri Bendel in Columbus, Ohio (center), and men at a new store, Structure, also in Columbus (bottom).

New Toys "R" Us distribution center gets goods into stores—and customers' carts—much faster.

self project, they think of Home Depot."

That sort of laserlike focus doesn't just let you know what items not to start selling; it also lets you know what items to *stop* selling. Since it opened its doors, Home Depot has been one of biggest sellers of unfinished wood furniture, developing it into an $80-million-a-year business. So why did the company recently stop selling it? Marcus says he wants to be the power retailer in any category. That means he's not about to let competitors beat him on price or selection or any other measure on any item he sells. But that was precisely what he saw happening not long ago when Home Depot started bumping up against players like IKEA. The Swedish retailer, with five stores in the U.S., dedicates the majority of its average store's 200,000 square feet to furniture, compared with Home Depot's 2,000 to 7,000 square feet for furniture. Offering customers a bigger selection drives up volume, enabling IKEA to keep prices even lower than Home Depot's. Says Marcus: "If we can't be the best in a category, it goes out of the stores." The chain will use the former furniture space to expand its selection of floor tiles and wallpaper.

J.C. Penney got smart in the 1980s by refocusing on—and sticking to—its plan to become a national department store. Long mentioned in the same breath with Sears and Montgomery Ward, Penney has broken away from that pack by concentrating on apparel and home furnishings, the products that drive traffic in the malls where most of its stores are located.

Persuading customers that Penney was a department store took more than just launching some snazzy ad campaign or splashing a slogan across the store's shopping bags. Products that brought in $1.5 billion a year—home electronics, appliances, photography equipment—went out of the stores. At the same time Penney had to convince higher-grade national brand apparel manufacturers, who wouldn't sell to the chain because of its discount, second-string image, that it was changing all that. Proof came in the form of expanded departments for women's and men's apparel—more than double the space previously given—and more boutique-like looks for items like lingerie. Crowded circular racks and clearance bins that scream "bargain basement" were replaced with sleek wooden shelves and more contemporary looking displays. Says Robert B. Gill, Penney's chief operating officer: "Changing over to a department store has been a long journey, but we never lost sight of what we wanted to be."

Says a supplier about J.C. Penney: "They pay their bills on time. Do you know what that's worth?"

Respect for the downside of debt has given these companies some of the healthiest balance sheets in retailing. The Limited has no operating debt and plans to open 2.75 million square feet of space this year, equal to about 12 two- to three-floor department stores. The Gap continues to remodel older stores and open new ones—the company will spend $190 million on such expansion this year—yet the interest it pays equals less than 1% of sales. Penney will spend $200 million this year to modernize 450 stores. With so many chains in intensive care, manufacturers notice such stability. A junior sportswear executive who sells to Penney says bluntly: "They pay their bills on time. Do you know what that's worth today?"

Yet for all their financial strength and market-share muscle, retailing's front-runners are rarely satisfied with their performance. The Limited, champ of the specialty store format, has earned the right to kick back and coast for a bit. It doesn't. No fewer than seven different stores fall under the Limited umbrella—Limited stores, Express, Victoria's Secret, Lerner's, Lane Bryant, Henri Bendel, and Abercrombie & Fitch. The company operates two catalogues, Victoria's Secret and Brylane, and owns Mast Industries, the division that manufactures some of the clothes sold in the stores.

Sales at the Limited have more than doubled since 1985, to $4.6 billion. Total return

Gap President Millard S. Drexler envisions lots of growth in newer stores like GapKids and babyGap.

REPORTER ASSOCIATE *Thomas J. Martin*

ANDY FREEBERG

Executives at Penney's Dallas headquarters help cut down buyers' travel time with direct satellite broadcasts of different clothing lines to the stores.

to investors during the 1980s averaged 53.1% a year, making it No. 1 by that measure on FORTUNE's list of the top 50 retailers. With the exception of Bendel and Abercrombie, the average store size in each of the Limited's groups has doubled since 1985, awarding them the clout—and cheaper rent—typically given to a mall's anchor department store.

Even after this phenomenal growth, CEO and founder Leslie Wexner just can't keep still. Managers who work for him politely say he's "not an easily satisfied guy." Replies the soft-spoken Wexner: "Good. There's always room for improvement. I daydream about perfection. You never get to 100%, but what is tantalizing and makes work fun is just the possibility we can get close."

Robert Grayson runs the 825-store Lerner division. When he and his associates were planning the new Lerner's flagship store that recently opened on 34th Street in Manhattan, they designed it not to meet the expectations of their budget-minded customer but to exceed them. The store is big and luxurious, with polished marble floors, spacious private dressing rooms, and seating areas throughout stocked with the latest magazines—all the amenities you would not expect to find in a store where the average customer purchase is $30. The idea, says Grayson, is to "overshoot the customer in everything—style, ambiance, selection—except price, so that she doesn't want to shop anyplace else." The result is that Lerner's effectively locks out weaker competitors who don't have the financial strength or merchandising flexibility to match its amenities or prices.

Once the champion retailers have customers hooked on attractive merchandise and super-looking stores, they fortify operations with technological might. Toys "R" Us CEO Charles Lazarus sounded like a kid at Christmas during the annual meeting in June, when he spoke about the company's newly opened $40 million distribution center in Rialto, California. The 612,000-square-foot facility can house over 80,000 pallets, or storage bins, by stacking them 50 feet high along narrow aisles. Operators get the goods with cherry picker–type trucks guided by wires in the floor and use laser scanners to identify the cartons. The Rialto center holds 45% more merchandise than the company's existing warehouses and takes up two-thirds the space. It lets the company get toys out of the warehouse and onto store shelves faster, keeping handling costs low and enabling Toys "R" Us consistently to beat anyone else's prices.

Penney takes its technology advantage and puts it right in the hands of employees. Several times a week buyers in all its large metropolitan stores can tune into direct satellite broadcasts from headquarters in Dallas. If merchandise managers sense that, say,

EIGHT HEALTHY RETAILERS . . .

COMPANY	SALES millions of dollars	PROFITS millions of dollars	CAPITAL EXPENDITURES % of sales	INTEREST COST % of sales
WAL-MART STORES	$25,921.8	$1,075.9	3.68%	0.53%
J.C. PENNEY	$16,405.0	$802.0	2.91%	1.85%
TOYS "R" US	$4,787.8	$321.1	7.77%	0.93%
THE LIMITED	$4,647.9	$346.9	6.85%	1.25%
DILLARD DEPT. STORES	$3,159.5	$148.1	4.56%	2.91%
HOME DEPOT	$2,771.9	$112.0	6.86%	0.58%
NORDSTROM	$2,671.1	$114.9	6.31%	1.84%
THE GAP	$1,586.6	$97.6	5.94%	0.17%
. . . COMPARED WITH ONE THAT ISN'T				
R.H. MACY	$7,222.5	($179.4)	2.22%	9.91%*

Figures are for fiscal year ended Jan. 1990 except for Macy's, which are for four quarters ended Jan. 1990.
*Includes interest expense not paid out in cash.

The key to good service is knowing what it means to your particular customer and then delivering it. Always.

jump suits are going to be a hot-selling item, they can order up a few samples from manufacturers and show that selection, along with different colors and fabrics, via satellite to buyers all over the country. Buyers can then place their orders with headquarters or, in some cases, directly with suppliers who are hooked into an electronic ordering system. These satellite feeds allow the retailer not only to cut travel time among buyers but also to react faster to changes in styles and give each store an individual look.

Dillard, one of retailing's two superstars from Arkansas—the other is Wal-Mart—began its love affair with technology in its earliest days. "I don't how you're supposed to make intelligent decisions without the facts," says William Dillard Sr., who opened his first store in 1938, "and computers give me the facts."

Since nearly 50% of the company's stores are those it has acquired since 1984—the latest coming from the J.B. Ivey & Co. chain, with 23 stores in the Carolinas and Florida—quickly getting them up and running as Dillard stores is critical. Managers' near-fanatical focus on technology allows them to install point-of-sale registers that tie into computers at headquarters, tag merchandise with bar-coded labels—thereby capturing customer information at the register—and reopen for business, all usually within a week.

With that kind of information at their finger tips, the smart players can listen closely to customers. "The common thread among retailers who really are doing it right," says the Limited's Wexner, "is that they realize the customer is the one calling the shots, not the other way around."

His major gripe with the textile firms that make fabrics for the Limited's clothing is that they don't realize this. "We'll ask these firms to make rayon, and they say, 'No, we make only Orlon.' When we tell them that Orlon is not the fabric our customers are telling us to buy, they'll come back with a comment like 'Let us analyze your sales and we'll tell you what to buy,' " Wexner says, shaking his head. "I want to tell them, 'You've got beans for brains. Don't you know the customer is more sophisticated than that?' "

NOWHERE is this sophistication more evident than in the type of service shoppers demand. According to a recent study by the U.S. Office of Consumer Affairs, between 37% and 45% of people who are unhappy with the service they receive do not complain. They simply go someplace else.

Does that mean if you're not carrying packages to customers' cars or visiting them at home to drop off the latest catalogue, you risk driving them away? No. The key to good service is knowing what it means to your particular customer. Is it a consistent store layout that lets her find what she needs quickly, whether the store is in Bangor, Maine, or

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downtown San Diego? Is it opening an additional checkout line when more than three people are waiting? Whatever the type, define it and then deliver it. Always.

Home Depot succeeds where other do-it-yourself chains stumble because it staffs stores with knowledgeable sales help, not the kid who can tell you only that Sheetrock is in aisle seven. If a customer is thinking of putting up, say, a stockade fence in his yard, a Home Depot salesperson can explain how many sections to order, what kind of posts are needed to reinforce the fence, and even what size nails to use. Says CEO Bernie Marcus: "Our customers wouldn't be trying a lot of these home improvement projects if they didn't think we could really help walk them through it."

Emphatically aware that a retailer's fortunes can disintegrate fast, the industry leaders spend heavily to spot tomorrow's successes—something else their weaker competitors can't do. You may not be familiar with Cacique, a shop for French lingerie, or a men's clothing store called Structure, but the Limited's Wexner is betting you will be. Those stores are what Wexner calls his toddlers, new businesses he envisions as the Limited's stars of tomorrow. "It's really exciting because last year I didn't know what they would turn out to be," he says. "Now I can see the next tier of growth in these baby businesses and how they are helping to energize the larger ones."

IN 1985, Wexner paid an estimated $10 million for Henri Bendel, an upscale women's boutique that had long been a mecca for style setters in Manhattan. Ownership gives the Limited entry into the land of higher-priced designer merchandise and a franchise name that evokes style and quality. "One of the nice things about Bendel was that it had a great name but was very small," says Wexner. "That means we can reinvent it to what the customer's expectation is." By 2000 Wexner envisions between 50 and 100 Bendels across the U.S.

Trying to play catch-up with this crowd is just miserable. Lazarus of Toys "R" Us says that as recently as two years ago his children's clothing chain, Kids "R" Us, could get only 50% to 70% of the goods it wanted from brand-name clothing makers. That's because these manufacturers were doing a big business with department stores. Today, says Lazarus, "we pretty much get everything we want. I don't think that's because manufacturers have increased capacity. I think it's because they are looking at balance sheets to see who is going to be able to pay the bills." In other words, because Lazarus is getting more merchandise, his competitors are getting less.

That's the way retailing is. The National Retail Federation forecasts that, after adjusting for inflation, sales of general merchandise, apparel, and home furnishings will increase only 3% this year and 4% in 1991. With consumer spending so sluggish, there just isn't much growth left over after market-share leaders have taken their huge bite. Says Gary Crittenden of the management consulting firm Bain & Co.: "Retailing is an I-win-you-lose business. If you're not gaining market share, you're losing." That's something the winners haven't forgotten and the losers are learning anew. F

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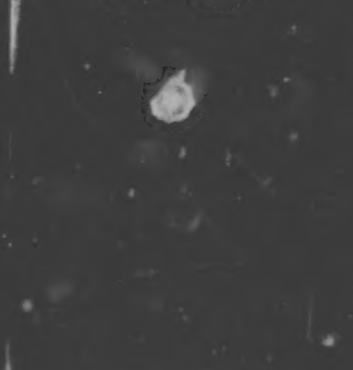

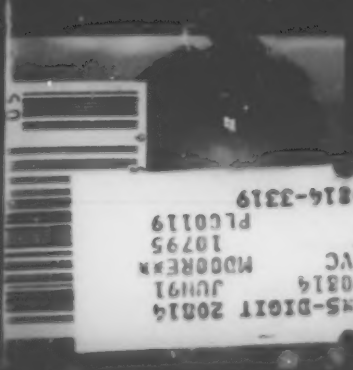

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EDITOR'S DESK

Editor Holt tasting the Orient in New York

SINCE we brought you our first special issue on the Pacific Rim last fall, the dynamic countries of the region have continued their headlong growth—many at an annual rate close to 7%. The Rim is full of opportunities to be seized. Says our international editor Donald Holt, who directed a team of 30 editors, writers, reporters, designers, and photographers to produce the issue: "Asia is no longer on the threshold of becoming an important economic power. It's here now." But don't expect this new mega-market to pop open like a fortune cookie. There are complexities you may never have dreamed of. This single issue, may I modestly suggest, contains the information you'll need to tackle them.

If you thought all the hard-chargers came from Japan, get acquainted with ten super-aggressive companies from the rest of the region, profiled by Louis Kraar, a member of our board of editors who opened our first Asia bureau eight years ago. With help from reporter Susan Moffat and Tokyo assistant Cindy Mikami, Kraar also chronicled 20 intriguing people you should know.

Louis Kraar back home from his Asian travels

Ford Worthy crosses the harbor in Hong Kong.

Rapoport (center) with Moffat (right) and Mikami

Hong Kong bureau chief Ford Worthy turned up fascinating demographic and sociological information that marketers ought to covet. Many Asians are poor no more. And they spend on quality. The intellectual debate in the U.S. over whether the Japanese will change may never be settled—until they do change. Tokyo chief Carla Rapoport examines the question and comes up with some surprising facts.

Designer Keehan (left) with editor Krist

Despite what you hear—correctly—about Houston-like skylines, Asia does not mirror the West. To help you take the Rim on its own terms, reporter Sara Hammes, who spent a year in Seoul before joining FORTUNE, has written an insider's guide.

To guide you through this issue, designer Maria Keehan produced a striking layout. Photo editor Elizabeth Krist worked nights in New York coordinating photographers who were starting their days just as she was supposed to be finishing hers.

The result, we hope, will turn your interest in Asia into understanding. This is the time to learn more about the Pac Rim.

Marshall Loeb

MANAGING EDITOR

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FORTUNE

RIGHT: Late afternoon at an intersection in the Ginza district of Tokyo. Photograph by Ken Straiton.

COVER: Photographs (clockwise from top right) by Paul Chesley (Aspen), Scott Rutherford (Black Star), H. Edward Kim, Jeffrey Aaronson, Peter Charlesworth (JB Pictures), R. Ian Lloyd, Takeshi Yuzawa, and (top left and center) Munshi Ahmed.

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The long-anticipated emergence of the region's nations as economic powerhouses is happening now, not tomorrow. Western companies must move swiftly or lose the most vibrant third of their global market. *by Louis Kraar*

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From Seoul to Singapore, the most frequent Asian stops on the business traveler's itinerary are great places to visit: beautiful, relatively safe, and offering some of the most tempting cuisines in the world. But it helps to know what you're looking for. *by Sara Hammes*

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Meet the Hong Kong developer building a toll road in China, the Japanese real estate executive who decided *not* to buy Rockefeller Center, and 18 other CEOs, managers, and technocrats who help drive the economies of the Pacific Rim. Nothing can dampen their enthusiasm. *by Louis Kraar*

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As of now, there's no real cause for anxiety. Japan's investment in the U.S. is heavy, reaching $70 billion last year. But much of that has benefited America. *by Brenton R. Schlender*

RANKINGS

THE FORTUNE PAC RIM 150 102

Our second ranking of the largest industrial corporations on the Asian side of the Pacific Rim reaffirms Japan's preeminence—and South Korea's role as its only challenger.

"Linked with Singapore, Malaysian and Indonesian labor will be very competitive in the markets of the world."
PAGE 8

"I've never seen a decision made by anybody except the chairman."
PAGE 25

"The era of seemingly shy, weak women in Japan is over. Sleeping Beauty has awakened."
PAGE 80

"To the Japanese, industries are like babies, and you never sell a baby for survival. Here it's as if every company is adopted."
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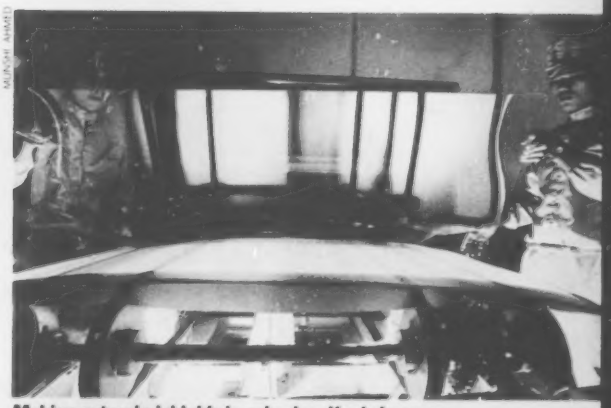


MUNSHI AHMED

Making auto windshields in suburban Kuala Lumpur

IAN LLOYD

Singapore Airlines crew members train for emergencies.

A Japanese tourist takes in the sights by trishaw.

THE JAPANESE TALK ABOUT THEMSELVES

As the decade begins, ordinary Japanese are confident of their economic prowess, not so sure of their political clout, and not eager to spend much on U.S. or European imports. This poll was conducted for FORTUNE *by Chuo Chosa Sha, a Tokyo research organization.*

Do you consider Japan a political superpower?

YES	26%
NO	57%
NO OPINION	17%

Do you consider Japan an economic superpower?

YES	65%
NO	26%
NO OPINION	9%

How does your standard of living compare with that of Americans and Europeans?

BETTER	14%
ABOUT THE SAME	32%
WORSE	32%
UNDECIDED	22%

With your present income, would you be able to buy a house?

NO	76%
YES	17%
UNDECIDED	7%

What would be the single most important factor in improving your lifestyle?

HIGHER WAGES	22%
SHORTER HOURS	17%
BECOMING LESS OF A WORKAHOLIC	14%
BETTER HOUSING	12%
LONGER VACATIONS	8%
MORE LEISURE FACILITIES	8%
OTHER	4%
UNDECIDED	15%

Do you consider Japanese products superior to American products?

YES	71%
NO	11%
NO OPINION	18%

Do you consider Japanese products superior to European products?

YES	72%
NO	11%
NO OPINION	17%

Would you buy . . .	YES	NO	NO OPINION
. . . an American car?	8%	86%	6%
. . . a European car?	16%	77%	7%
. . . an imported TV?	3%	91%	6%

ON THE Japanese economy, optimists and pessimists are almost equally divided. Among those looking forward to endless expansion, many are banking on technology. Says a 26-year-old office worker who has a college degree: "Robots will increase production." Nor is that attitude restricted to the young. An 80-year-old business owner has a one-word explanation for his confidence: "Computerization." Adds a self-employed 56-year-old woman: "Automation will make things better." A housewife, 56, is hopeful because "the country is solid, unified." A 26-year-old woman who works in an office is putting her faith in Japan's "money surplus." Those who are nervous about the future see fierce competitors coming at them from all sides. Says a 27-year-old high school graduate who has a job as a laborer: "The growing European economy will be a negative factor for Japan." A 48-year-old man who owns his own business is worried that the newly industrializing economies—South Korea, Singapore, Hong Kong, and Taiwan—will "catch up." A 44-year-old salaryman is concerned that the various structural changes Japan is making in response to pressure from the U.S., such as moving to a more consumer-based economy and encouraging imports, "will hinder growth."

Do you think the Japanese economy will get better or worse in the future?

MUCH BETTER	13%
SOMEWHAT BETTER	22%
SOMEWHAT WORSE	28%
MUCH WORSE	6%
NO OPINION	31%

ALMOST HALF of those who now respect the U.S. less resent American pressure on Japan to lower its trade surplus. Says a 54-year-old salaryman: "When times are good, all is well. But when the U.S. economy started to deteriorate, they started putting the burden on us." Adds a 26-year-old woman who owns a business: "There have been too many economic demands, one after another." A recent college grad who has not begun working thinks the U.S. has been "one sided." A 49-year-old entrepreneur says, "America treats Japan as a colony." A 38-year-old housewife is annoyed by "the pushy, arrogant attitude of Americans on TV." A retired man, 64, objects to what he sees as "condescension" by Americans, which he attributes to racial prejudice. Another retiree is irritated because Americans "do not admit the hardworking nature of the Japanese." Of those whose respect for the U.S. has increased, many remain grateful for American aid after the war. Says a 59-year-old laborer: "They helped us out of ruin and we are prospering today because of them." Adds a housewife who was 12 when the war ended: "I'll never forget the attitude of MacArthur." A 59-year-old retired man appreciates the U.S. for "being a superpower and a melting pot at the same time."

Has your respect for the U.S. increased or decreased in the past five years?

INCREASED	11%
DECREASED	33%
NO OPINION	56%

TEN TO WATCH OUTSIDE JAPAN

Aggressive conglomerates from Singapore, Malaysia, South Korea, Thailand, and Taiwan are ready to challenge both the Japanese and global giants of the West. ■ by Louis Kraar

PETER CHARLESWORTH—JB PICTURES

At this modern factory near Bangkok, Siam Cement Group of Thailand produces engines for Toyota pickup trucks.

FROM THE burgeoning Asian economies outside Japan—from South Korea and Thailand, Singapore, Malaysia, and beyond—a new breed of corporate giant is rising to challenge top businesses in both the Orient and the West. Little known in the U.S., and less understood, the best Asian companies outside Japan are substantial enterprises with over $1 billion in annual sales, first-class management, fat profits, and scorchingly hot growth rates. These are the bluest blue chips of their native lands, and as they begin to weave alliances with the likes of IBM and Toyota, they are shouldering into the highest levels of world competition.

Big as they are now, these emerging companies may become overpowering in just a few more years. Compared with the Japanese, they are late arrivals in global markets, but they are bound to catch up fast. More freewheeling than their Japanese counterparts and most big American multinationals, the ten companies listed on page 26 are developing a fascinating new mid-Pacific management style that melds elements of traditional Asian entrepreneurialism with business-school rigor. One early result: No longer dependent on cheap local labor as a competitive edge, they are pushing research in electronics and other fields, and opening factories overseas—sometimes, ironically, to exploit other countries' cheap labor.

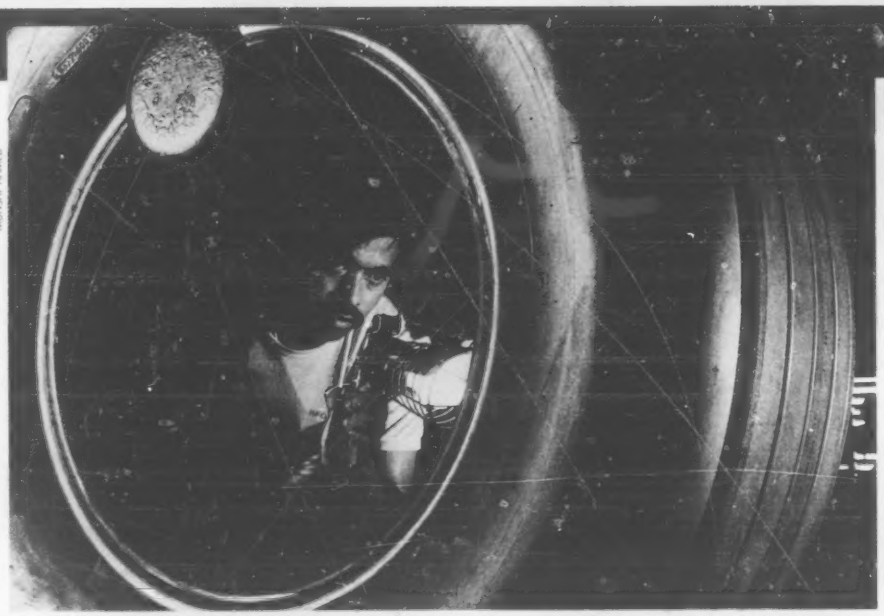
Products of a vast region that embraces diverse languages and cultures, they fall into three broad categories: enterprises controlled by governments, such as Singapore Airlines; companies—or more often groups of companies—founded and controlled by Overseas Chinese families, including CP Group in Thailand; and South Korean conglomerates, or *chaebols*, such as Samsung, which also remain under founding-family control.

Picking ten out of all the enterprises flourishing in the Pacific Rim is something of an arbitrary exercise. Some are privately held, making comparisons with public companies difficult. Many Asian groups behave as a single entity but do not report on a consolidated financial basis. Frequently the force that unifies them is not accounting but the ambition of a powerful dynast who is both owner and CEO. Whatever their circumstances, every company on FORTUNE's list is venturesome, long successful, and guided by a strategy that promises continued growth and greater global reach.

Though some Asian stock markets inhibit participation by outsiders, the determined

REPORTER ASSOCIATE *John Labate*

investor can find ways to play most of these companies. Seoul bars stock purchases by foreigners, but shares in the Korea Fund—a portfolio of the country's blue chips including components of every Korean conglomerate on FORTUNE's list—trade on the New York Stock Exchange. Siam Cement of Thailand officially restricts foreign ownership to 25%, but the rule is impossible to enforce. Anyone may buy those securities on the Bangkok Exchange. The Li Ka-Shing Group consists of four companies that trade on the wide-open Hong Kong market. Securities of Malaysia's Sime Darby and the other public companies are listed on their home exchanges.



MUNSHI AHMED

In Malaysia, Sime Darby and joint venture partner Michelin produce tires for 747s and other aircraft.

MEMBERS of the first category—those backed by governments—are lonely standouts in a region littered with inefficient state corporations. In market-minded Singapore, the government demands that its commercial enterprises earn their own way and then go public. **Singapore Airlines**, the world's most profitable airline, is a prime example of this policy. Says Deputy Chairman Lim Chin Beng: "From the very beginning, Singapore Airlines has operated as a commercial enterprise without any subsidy, handout, or government interference." That's a slight exaggeration: The airline won landing rights in 37 countries with a little help from the state. International carriers are eager to land in strategically located Singapore, and the government welcomes all comers. In return, it demands reciprocal landing rights for SIA.

Spun off nearly 18 years ago from a joint venture with neighboring Malaysia, the carrier has been publicly traded since 1985. It is now 54% state owned, but the government plans eventually to reduce that stake to around 30%. Cash-rich in an industry laden with debt, SIA has the youngest fleet of any major international airline.

It also has some of the youngest flight attendants. The "Singapore girls," who provide Asian hospitality plus the spice of sex appeal, must retire before they turn 40, a policy that would be illegal for an American carrier because of U.S. age discrimination laws. SIA outspends rivals on meals and serves Taittinger champagne in business class. The formula works: The airline fills an average of 78% of its seats, vs. 68% for all international carriers.

Success hasn't quenched the ambition of Chairman Joseph Y. Pillay, whose management theory boils down to "just working at it all the time." To boost competitive strength in the U.S. and Europe, SIA has allied with Delta and Swissair, sealing the deal with a three-way swap of minority stock interests. The airline plans to spend $10 billion on new planes and ground facilities during this decade.

Sime Darby of Malaysia, another state-controlled enterprise, is an expansive conglomerate with manufacturing and trading operations that sprawl across Southeast Asia to Australia. The government indirectly owns about a third of the shares—Kuwait has 6%—but has a long track record of leaving management alone. Sime Darby's CEO is a local prince named Tunku Ahmad Yahya (*tunku* means prince). An economics graduate of England's University of Bristol, where he captained the soccer team, Tunku Ahmad, now 61, began as an accountant.

"Rather than bemoaning our fate of being exploited by the multinationals, we joined the club," he says cheerfully. He knew just how to gain admission. Back in 1975, Sime Darby was a complacent British outfit that owned massive rubber, palm oil, and coca plantations in Malaysia. Instead of nationalizing the company, the Malaysian government bought a controlling interest in one fast swipe on the London Stock Exchange.

Sime Darby's return on investment reached 19.6% in 1989, up from 14.8% five years earlier. The old plantations have "paid the rent" in Tunku Ahmad's phrase, while Sime Darby cautiously diversified into regional ventures ranging from BMW dealerships to real estate development to the manufacture of bathtubs. Entering the condom business on a world scale, Tunku Ah-

THE UP-AND-COMERS OF ASIA

	SALES in millions	PROFITS in millions	BUSINESS ACTIVITIES
SAMSUNG *(South Korea)*	$35,189	$515	Electronics, shipbuilding, insurance, trading
DAEWOO *(South Korea)*	$19,981	$115	Electronics, construction, autos, heavy machinery
LUCKY-GOLDSTAR *(South Korea)*	$19,964	$285	Electronics, chemicals, trading, construction
SSANGYONG GROUP *(South Korea)*	$7,422	$172	Cement, trading, oil refining, construction
FORMOSA PLASTICS *(Taiwan)*	$6,613	$425	Plastics, chemicals, textiles, plywood
LI KA-SHING GROUP *(Hong Kong)*	$3,481	$1,644	Real estate, telecommunications, energy, trading
SINGAPORE AIRLINES *(Singapore)*	$2,653	$625	International airline
CHAROEN POKPHAND *(Thailand)*	$2,600*	N/A	Poultry breeding and processing, feed mills
SIME DARBY *(Malaysia)*	$1,569	$101	Rubber and other plantations, trading, tires
SIAM CEMENT *(Thailand)*	$1,235	$155	Cement, machinery, construction materials

All figures are as of 12/31/89, except Sime Darby (6/30/89) and Singapore Airlines (3/31/90).
* Estimate

- mad recently bought Dur-A-Vend, a British company that makes a product called Jiffy. Its slogan: "Do it in a Jiffy."

IN THAILAND, a kingdom where corruption is as common as orchids, **Siam Cement** thrives on integrity. A royal connection enables this conglomerate to prosper without making ethical compromises that might disquiet potential Western partners. Founded by King Rama VI in 1913 to produce cement, which Thailand previously had to import, the enterprise has grown to 50 operating companies producing building materials, automotive engines, petrochemicals, and more.

Thais regard anything associated with their King as almost sacred. That reverence extends to Siam Cement, some 40% owned by the King's Crown Property Bureau, a sort of charitable foundation that spends its profits on social welfare programs.

High ethical standards can be a short-term disadvantage, but group president Paron Israsena, 62, argues that they pay off in the long run. For example, last year the company formed a $117 million joint venture with Guardian Industries of Michigan to manufacture plate glass. Then Thai-Asahi, a well-connected competitor with a stranglehold on Thailand's plate-glass market, induced government agencies to block Siam Cement's entry into the business. But Thai public opinion favored Siam Cement, and the deal won approval this summer. Says Paron, "A lot of people spoke up for us."

Paron expects revenues to surge during the next five years as new manufacturing joint ventures begin production. Siam Cement will make glass bulbs for TV tubes with Asahi of Japan, rotary compressors for air conditioners with Mitsubishi Electric, and petrochemicals with Dow Chemical.

Siam Cement apparently does some creative accounting—but in reverse. Says Timothy P. McKenna, research manager at Jardine Fleming Thanakom Securities in Bangkok: "Based on generally accepted accounting standards, Siam Cement is understating its earnings by 20%." Even so, conservative Siam Cement last year reported that profits—after nearly doubling in 1988—rose another 45%, to $155 million. McKenna rates Siam Cement as "the best value" in the Thai market.

The only notable thing the company does poorly is communicate with its shareholders. Recently Siam Cement invited brokerage firms to a briefing, but refused to provide any information not published in its annual report. Several angry guests stormed out before lunch was served.

The second group of emerging companies is run by Overseas Chinese, industrious people of Chinese descent who live outside mainland China. Members of this canny minority have long dominated commerce in Southeast Asia. Most of their businesses are private firms in which the patriarch makes all the decisions and the payroll is crammed with relatives, some of whom may not contribute much. Now a few Chinese entrepreneurs, determined to build lasting enterprises, are hiring professional managers, taking their companies public, and sending their heirs to American business schools.

LI KA-SHING may well be the richest man in Hong Kong, where he built a personal fortune of $2.7 billion trading real estate. Considerate and gifted at nurturing relationships, he runs four public companies that make up what might be called the **Li Ka-Shing Group**. These companies do not consolidate accounts, but Li, 62, commands them all through his 40% ownership of Cheung Kong, a property developer. Cheung Kong, in turn, controls the other three: Hutchison Whampoa, a conglomerate; Hongkong Electric, a utility; and Cavendish, an investment holding company. Their combined annual profits add up to more than $1 billion—more than Nissan or Toshiba earned last year. The return on equity of

Cabin crews of Singapore Airlines are known for charm—but they're trained for emergencies.

Hutchison, the largest unit, has averaged a meaty 19% annually over the past decade.

Li sent his two sons to Stanford. He maintains traditionally tight financial controls, but he gives his subordinates, both Chinese and Western expatriates, a degree of autonomy that might shock some of his peers. His enterprise has grown far too complex for any one person to run. Hutchison, for instance, owns port terminals handling over half of Hong Kong's container traffic, a mobile telephone venture with Motorola, a TV satellite, and a coal-trading partnership with Total of France.

Simon Murray, 50, a Briton who served in the French Foreign Legion, is Hutchison's managing director and Li's ambassador to Western companies. Says Murray, an experienced Asia hand: "Li is a brilliant strategist—and he leaves me to run the business."

Li insists that Hong Kong, which reverts to Chinese rule in seven years, "is still a good place to make a profit." But he is hedging a bit. In 1986 he bought control of Husky Oil, Canada's largest integrated independent oil company. He is also investing $1.6 billion in a 204-acre development in Vancouver that amounts to practically an entire township of apartments and office buildings. If Hong Kong someday sinks into the sea, Li will not sink with it.

In Thailand, another Overseas Chinese family has turned chicken feed into big profits, building a multinational called **Charoen Pokphand**, or CP Group. Chairman Dhanin Chearavanont's father and uncle started the business in 1921 as a small Bangkok shop that sold seeds. Since then CP has grown into a huge agro-industrial group of some 100 companies, operating from China to Turkey. The group, most of whose member companies are privately owned, does not disclose total profits, but bankers say it can finance relentless expansion.

CP has prospered by creating an integrated poultry industry in Thailand, where labor remains relatively cheap. The company produces feed and breeding stock, processes birds, and often exports them to Europe and Japan as frozen dinners. Nothing is wasted: Chicken droppings are sold for fertilizer. Trying to cover every base, CP is also a major international commodity trader, a wholesale distributor of foodstuffs, and a Kentucky Fried Chicken franchisee in Bangkok and China. The company has teamed with Oscar Mayer to make packaged pork and with Mitsubishi to breed prawns.

STAG CHEN-AGAMEN

LINCOLN POTTER-GAMMA-LIAISON

BRIANO GROSS

Founder Y. C. Wang (top) still makes all decisions at Formosa Plastics. Dhanin Chearavanont (left) is chairman of Thailand's CP group. Briton Simon Murray (right) runs a major part of Li Ka-Shing's group in Hong Kong.

Another round of diversification is pushing CP far beyond food. Says executive vice president Ajva Taulananda: "Our founders were entrepreneurs, so we're always looking for new things to do." CP is building a $400 million petrochemical plant with Belgium's Solvay to make feedstocks for plastics, which the company also plans to produce. The Thai group has launched 15 businesses in mainland China, where Ajva claims CP's Overseas Chinese identity will help it flourish. The firm, which has several joint ventures in the People's Republic, makes motorcycles there with Honda and beer with Heineken.

Best known for such products as cars and forklifts, Daewoo Group of South Korea also makes pianos.

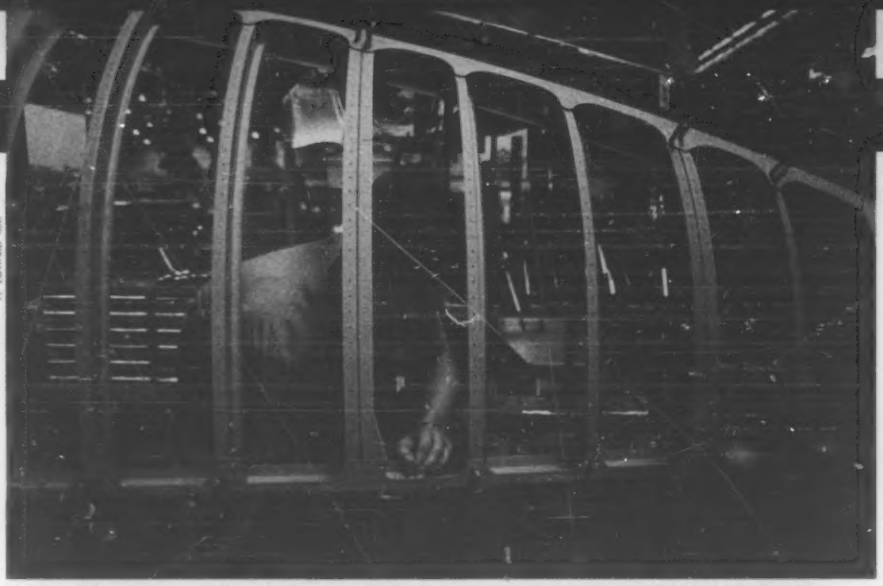
H. EDWARD KIM

FIFTEEN HUNDRED miles east, in Taiwan, the largest nongovernment enterprise is **Formosa Plastics Group,** founded and still dominated by Chairman Y. C. Wang, 73. Wang quit school at 15 and started out as a rice merchant and lumber dealer; he went on to pioneer Taiwan's plastics industry. The group he runs—a mix of public and private companies—is the world's largest producer of polyvinyl chloride (PVC), the plastic used in plumbing pipes. Formosa Plastic, which operates 14 plants in the U.S., is the top producer of PVC pipe in America.

A frugal multibillionaire, Wang commands his 44,000 employees with hands-on attention to the smallest details. Says his son Winston, 39, a company manager who earned a Ph.D. in chemistry at the Imperial College of Science and Technology in Brit-

ain: "I've never seen a decision made by anybody except the chairman."

Most days the patriarch lunches with subordinates, who eat before he arrives so they can concentrate on his torrent of queries. Dismayed at the opportunities Wang saw for suppliers to corrupt his purchasing managers, he had the purchasing process computerized so that managers and vendors never meet face-to-face. Says Wang: "The way that one executes a job can always be improved, so rationalization has no end." His idiosyncratic management style pays off handsomely: Formosa Plastic's pretax return on capital topped 33% last year.



M. EDWARD RAY

Pushing into aerospace, Korea's Samsung makes components for Boeing 757 jets, including doors.

SOUTH KOREA is home to the third group of emerging Asian companies. Dominated by some 30 conglomerates, or *chaebols*, Korea's economy achieved world prominence by producing many of the same goods as Japan at a lower price. But that strategy no longer works: During the past several years local labor costs have shot up and the value of Korea's currency, the won, has risen sharply. The best-run *chaebols* are responding by automating their factories, setting up offshore plants in Southeast Asia, and hunting for new sources of profit.

Korean conglomerates all seem to be in the same businesses—electronics, shipbuilding, construction, and industrial equipment—but each reflects the personality of its boss. **Samsung** is Korea's leading producer of electronics, food products, pharmaceuticals, and paper. It also owns a baseball team. Started as a trading company in 1938, it is still controlled by descendants of the late founder, Lee Byung Chull. Greatly influenced by Japan—perhaps because he kept a second family in Tokyo with his Japanese mistress—Lee shaped his group of 38 companies along Japanese lines, picking managers by competitive exams and investing heavily in their training. *continued*

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Chairman Lee Kun-Hee, 48, third son of the founder, believes Samsung must change dramatically to prosper in the 1990s. Says he: "Unless we become one of the world's first-class corporations by the end of this decade, we simply can't survive." For years, Samsung flourished as an efficient, low-cost assembler of such products as television sets and microwave ovens. But those markets have matured. And with Samsung's Korean workers costing an average of $20,000 annually, vs. around $30,000 in Japan, Samsung can no longer just make cheaper versions of me-too products. Says Jee Seung-Lim, director of corporate planning: "Now we're focusing on higher-technology activities."

The difficulty is that as Samsung's competitors, from Texas Instruments to Sony, expand globally, they are increasingly reluctant to sell or license their technologies. So the scrappy *chaebol* is investing $1 billion a year, 6.2% of manufacturing sales, in research and development in such areas as photographic color film, biotech pharmaceuticals, and advanced semiconductors. Early results include a new high-speed fax machine, which Samsung claims is comparable to the latest Japanese models. The company's pattern already is clear: It started making memory chips just eight years ago and is now one of the world's top producers.

LEE IS ALSO striving to boost profits, which amounted to just 1.3% of sales last year. To streamline managers' work, Samsung now requires that once voluminous reports be shortened to summaries of a page or two. Managers cut the palaver at meetings by announcing how much the gatherings cost per hour. Overtime for office workers has plunged thanks to the campaign. Says planner Jee: "Now our people leave the office much earlier in the evening—no later than 8 P.M."

The founder of **Daewoo**, Korea's youngest major *chaebol*, is still in charge. Chairman Kim Woo-Choong, 53, started the group in 1967 as South Korea's first exporter of textiles. A legendary workaholic who sleeps only a few hours a night and almost never takes a day off, Kim has a special talent for global marketing. As Yoon Young-Suk, 52, president of the group's trading flagship says, "The whole organization has the smell of international dealings."

Daewoo is particularly adept at opening new markets, most recently the Soviet Union and Eastern Europe. "With those countries," says Yoon, "simple import and export are not going to happen." To sell its ships, autos, and electronic products to Czechoslovakia, for example, Daewoo takes payment in credits for Libyan oil, which it then processes at its refinery in Belgium. Similarly, it built a tire factory in Sudan in exchange for cotton, which it uses to make clothes in Korea.

Chairman Kim has relied mainly on acquisitions to extend Daewoo's tentacles into industry after industry, from autos to electronics to heavy machinery. He made the most of the subsidized loans the government once granted to all Korean conglomerates in their formative stages.

A power in both electronics and petrochemicals, **Lucky-Goldstar** is trying to make a dramatic transition with help from McKinsey & Co., the American management con-

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sultant. As insiders readily acknowledge, the family-controlled company needs to shed its slow-moving, bureaucratic ways to compete effectively in global markets. Says executive vice president Kwon Moon-Koo: "In the past our chairman ordered and controlled everything. He has announced that in the future management should be professional."

Lucky-Goldstar is counting on alliances with Japanese and Western companies to overcome what Kwon candidly terms "our shortcomings" in technology. The group is working with Siemens in telecommunications equipment, Honeywell in industrial control systems, and Hitachi in communications cable. The Korean company is moving plants overseas to key markets, making TVs and VCRs in West Germany, microwave ovens in Britain, and refrigerators in Italy. Says Kwon, echoing his U.S. consultants: "We no longer have the lowest costs, so we must compete by giving more service to customers."

THE MOST AGGRESSIVE *chaebol* of all may be **Ssangyong Group**, whose ambitious chairman, Kim Suk-Won, is at 45 the youngest head of any Korean conglomerate. The founder's son, Kim earned a degree in economics at Brandeis and developed a Korean ski resort on his own before inheriting the top job in 1975. "The only major product we had then was cement," remembers Kim, whose family controls the group.

Diversifying rapidly, Kim built an oil refinery in Korea in partnership with National Iranian Oil Co. When Khomeini took power, Kim bought out the Iranians. A cement-making joint venture in Singapore positioned Kim to build the Raffles City complex there, including a 73-floor hotel billed as the world's tallest. The contract is worth $400 million to Ssangyong Group.

In 1982 Kim realized that the rising yen priced his cement 30% below that of Japanese producers, so he spent three years fighting for the right to sell it in Japan. He was finally allowed in after he agreed not to underprice Japanese producers, an arrangement that boosted his profit margin.

Such tactics—combined with strong operations, solid financing, and heady rates of growth—make Asia's emerging companies a force that international executives can no longer afford to ignore. Says Mark Greenwood of First Pacific Asia Securities in Thailand: "These companies are aggressive, long-term players out to conquer the world." More often than not, they are trying to do that with Western partners—and winning.

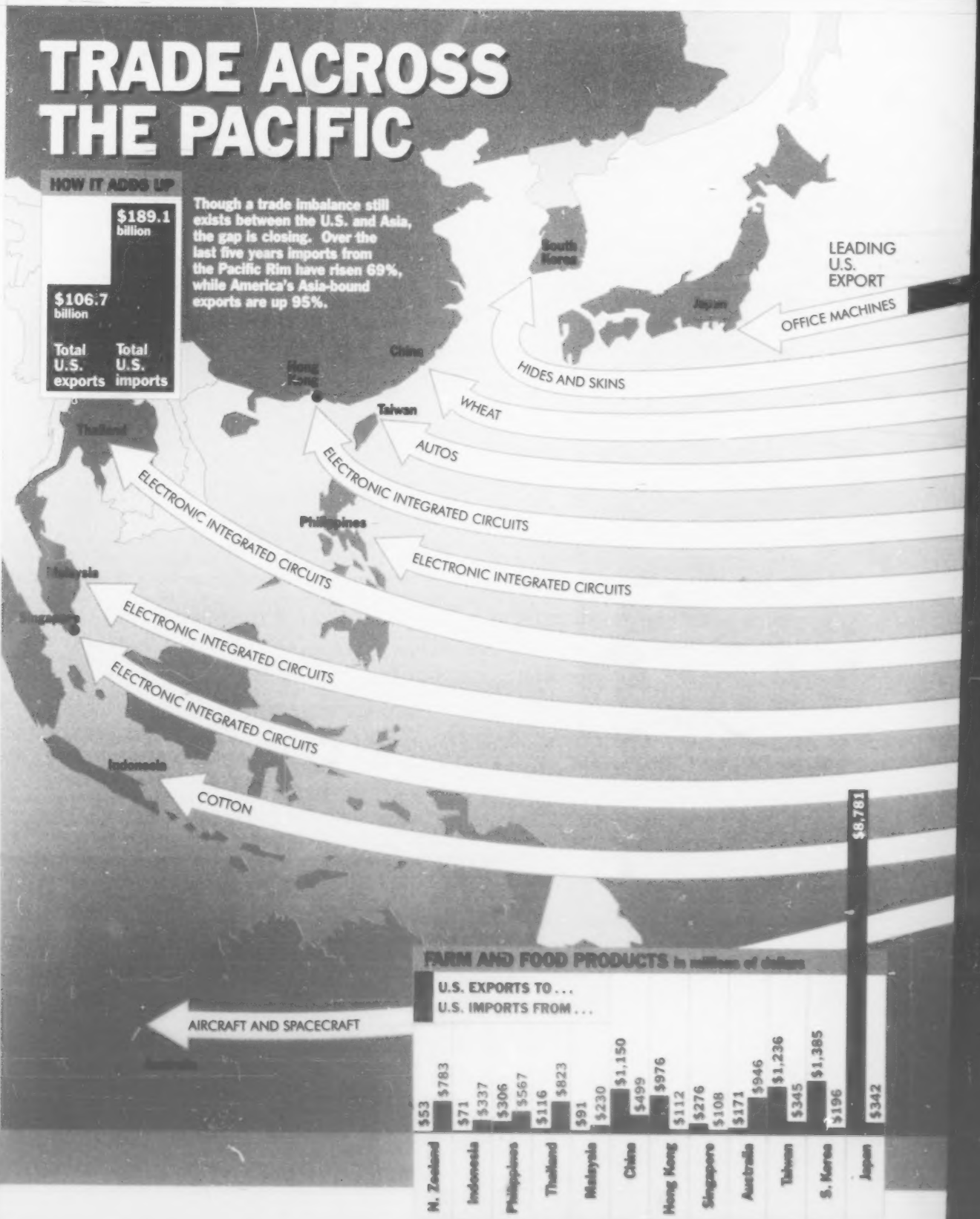
THE PENINSULA GROUP

The One hotel group whose name is synonymous throughout the East with traditional standards of elegance, style and grace, now has a sparkling string of properties that stretches through the Pacific to the Atlantic.

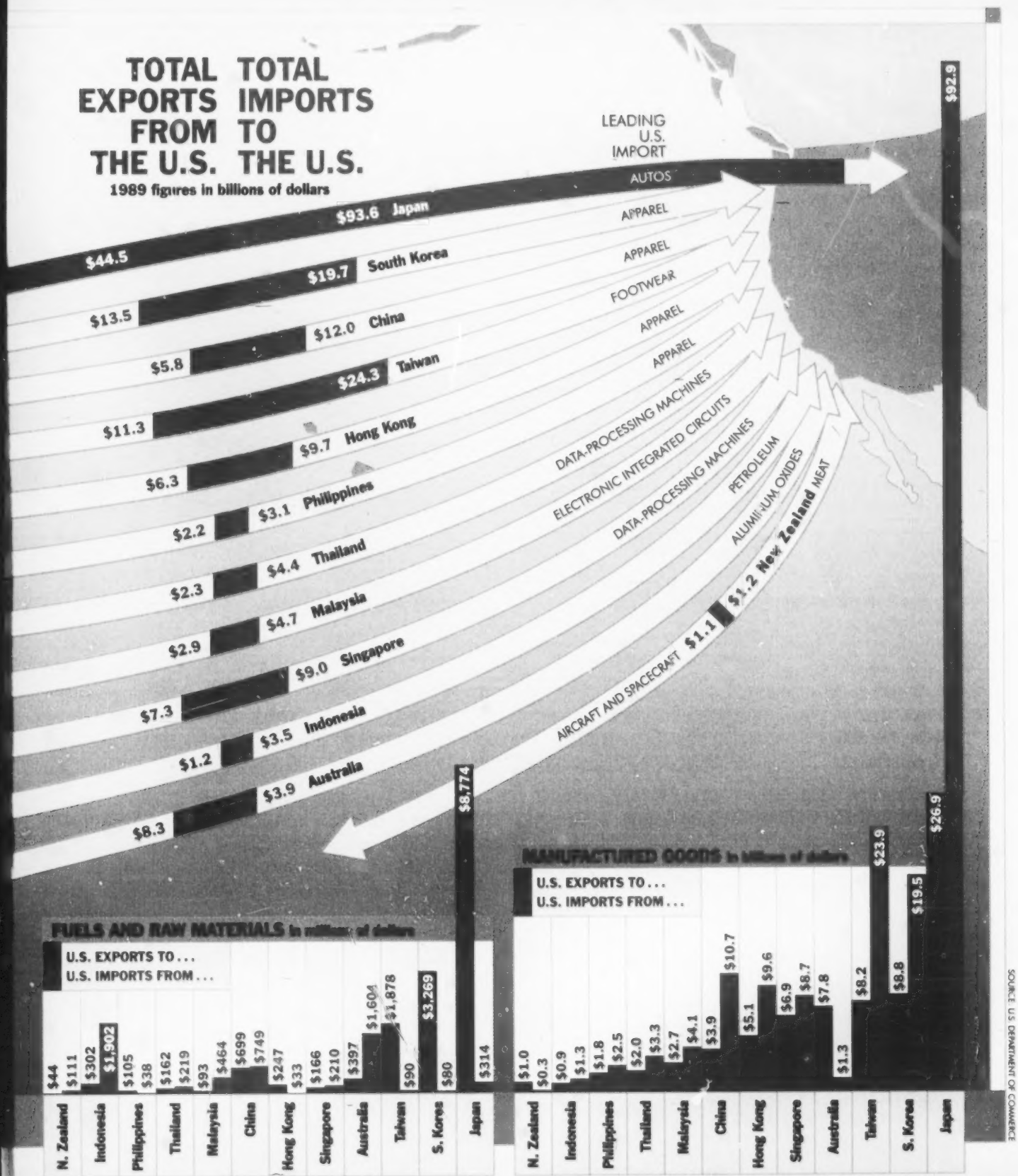
The Peninsula, Hong Kong
The Kowloon Hotel, Hong Kong
The Manila Peninsula, Manila
The Palace Hotel, Beijing
The Peninsula, Bangkok (opening 1993)
The Peninsula, New York
The Peninsula, Beverly Hills (opening 1991)

THE PENINSULA GROUP

TRADE ACROSS THE PACIFIC



RESEARCH JOHN LABATE MAP JEAN HELD



SOURCE: U.S. DEPARTMENT OF COMMERCE

THE PAC RIM 150

FORTUNE's second ranking of the largest industrial corporations on the Asian side of the Pacific Rim reaffirms Japan's preeminence—and South Korea's role as its only challenger.

It was business as usual for the 150 largest industrial companies in the Pacific Rim last year. In short, business was good and Japan got most of it. Among the Pac Rim 150—126 of which are Japanese—sales rose 19%, while profits climbed 26%. The leader of the pack in both categories was again Toyota Motor, which earned $2.6 billion on revenues of $60.4 billion.

South Korea's 11 biggest conglomerates also scored big gains, particularly in their fast-growing home market. Led by Samsung (No. 5) and Daewoo (No. 11), they generated $103 billion in sales, more than double those of the ten Australian companies on FORTUNE's list. No one else came close. Malaysia, New Zealand, and Taiwan each have only one company among the 150.

The region's comeback king was Taiyo Fisheries of Japan (No. 34), which netted $60 million—a 6,209% increase over last year's profit performance—by casting off two unprofitable subsidiaries. Japanese metal-bashers accounted for the other big turnarounds. Earnings soared 2,643% at Ishikawajima-Harima Heavy Industries (No. 56), which builds ships and factory automation systems among other things, and jumped 2,078% at Sumitomo Metal (No. 28).

Among the newcomers to the list, acquisitions fueled the rise of Goodman Fielder Wattie (No. 133), Australia's largest food company. But it was the unsated appetite of Japanese and American youth for videogames that boosted sales by 46% at Nintendo (No. 149).

The only money losers were Australia's Pacific Dunlop (No. 95), one of the world's largest makers of condoms, and Bond Corp. (No. 54). Pacific Dunlop blamed its $81 million loss on acquisition expenses. Entrepreneur and yachtsman Alan Bond blamed government regulators, short sellers of his stock, and a host of other bad breaks for his $795 million hit. The real killer: unexpectedly high interest rates that have driven his debt-laden empire to the brink of bankruptcy.

– Jung Ah Pak

RANK 1989	RANK 1988	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank
1	1	TOYOTA MOTOR[1]	Japan	60,443.6	2,631.1	1	49,672.8	2	25,761.0	1	91,790	9
2	2	HITACHI[2]	Japan	50,894.0	1,446.7	4	52,253.2	1	17,184.3	3	274,508	1
3	3	MATSUSHITA ELECTRIC INDUSTRIAL[2]	Japan	43,086.0	1,664.0	3	48,217.9	3	21,590.1	2	193,088	2
4	4	NISSAN MOTOR[2]	Japan	36,078.4	889.7	8	35,713.4	4	12,422.3	4	117,330	5
5	5	SAMSUNG	South Korea	35,189.1	515.1	15	28,415.6	7	3,561.8	27	176,947	3
6	6	TOSHIBA[2]	Japan	29,469.3	930.8	6	31,676.8	5	6,630.7	11	125,000	4
7	7	HONDA MOTOR[2]	Japan	26,484.3	758.5	9	17,206.1	15	6,789.6	9	71,200	13
8	8	NEC[2]	Japan	24,594.8	502.6**	18	25,204.6	9	5,192.1	15	104,022	7
9	11	MITSUBISHI ELECTRIC[2]	Japan	21,213.3	415.0	22	20,380.6	11	4,812.8	18	85,723	11
10	10	NIPPON STEEL[2]	Japan	20,767.0	607.9	12	26,143.7	8	5,486.2	14	64,504	14
11	9	DAEWOO	South Korea	19,981.4	114.5	77	28,986.2	6	4,645.3	21	91,056	10
12	13	FUJITSU[2]	Japan	18,734.1	541.1	14	19,770.5	13	7,239.4	7	104,503	6
13	14	MITSUBISHI MOTORS[2]	Japan	16,839.9	147.4	63	11,276.0	29	1,740.8	59	37,908	23
14	17	SONY[2]	Japan	16,680.2	563.8	13	17,811.1	14	6,867.6	8	78,900	12
15	12	MAZDA MOTOR[2]	Japan	15,572.5[3]	99.1[3]	84	9,906.2	32	2,599.2	40	28,382	31
16	15	MITSUBISHI HEAVY INDUSTRIES[2]	Japan	15,007.1	482.3	19	23,527.1	10	5,815.4	12	55,500	16
17	16	NIPPON OIL[2]	Japan	14,562.7	216.3	45	13,388.2	21	3,626.6	25	9,669	103
18	19	BRIDGESTONE	Japan	12,379.1	68.2	100	11,408.3	26	3,056.4	33	93,193	8
19	23	IDEMITSU KOSAN[2]	Japan	11,249.3[4]	13.1[4]	148	9,844.5[4]	33	327.4[4]	142	5,292[4]	133
20	26	NKK[2]	Japan	10,925.8	714.5	10	20,088.0	12	2,372.8	47	29,993	30
21	18	SANYO ELECTRIC[5]	Japan	10,486.9[6]	123.6	72	14,184.0	20	4,987.3	17	55,526	15
22	33	ELDERS IXL[1]	Australia	10,338.7	543.8	17	7,487.2	48	2,943.5	34	33,702	26
23	24	CANON	Japan	10,023.6[6]	277.5	28	11,379.6	27	3,830.6	24	44,401	21
24	25	SHARP[2]	Japan	9,927.5[6]	226.0	41	13,291.1	22	4,027.7	23	32,298	28
25	32	KOBE STEEL[2]	Japan	9,886.3	198.3	49	14,959.0	17	1,782.5	56	24,456	41

The definitions and concepts underlying the figures in this directory are explained on page 106. Footnotes appear on page 105.

RANK 1989	1988	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	Rank	ASSETS $ Millions	Rank	STOCKHOLDERS' EQUITY $ Millions	Rank	EMPLOYEES Number	Rank
26	21	ISUZU MOTORS[7]	Japan	9,867.7[6]	122.2	74	7,233.9	50	1,084.4	88	24,335	43
27	22	NIPPONDENSO	Japan	9,663.2[6]	348.4	25	9,005.8	35	4,159.7	22	49,390	18
28	31	SUMITOMO METAL INDUSTRIES[2]	Japan	9,643.0	451.8	20	14,759.5	18	2,868.0	35	26,753	33
29	27	COSMO OIL[2]	Japan	9,488.4	81.9	96	8,000.3	44	504.1	127	3,700	144
30	38	BROKEN HILL PROPRIETARY[5]	Australia	9,127.2	924.6	7	15,039.9	16	5,037.1	16	49,000	19
31	35	KAWASAKI STEEL[2]	Japan	9,081.2	378.1	24	13,266.2	23	2,767.8	37	24,455	42
32	29	SUNKYONG	South Korea	9,014.0	154.3	60	6,711.0	53	1,679.0	61	21,876	48
33	37	MITSUBISHI KASEI[2]	Japan	8,649.5[3]	157.0[3]	59	10,719.9	30	1,560.8	64	19,075	63
34	34	TAIYO FISHERY[2]	Japan	8,326.1[3]	60.3[3]	107	3,376.3	104	313.4	143	7,988	112
35	28	SHOWA SHELL SEKIYU	Japan	8,229.9	46.3	120	5,661.4	63	498.9	130	N.A.	460
36	30	ASAHI GLASS	Japan	8,088.4[6]	426.7	21	8,530.2	38	3,583.5	26	17,605	69
37	41	CHINESE PETROLEUM[9]	Taiwan	8,008.2	1,776.2	2	10,390.6	31	7,877.3	5	22,357	47
38	40	ASAHI CHEMICAL INDUSTRY[2]	Japan	7,991.6	268.2	30	7,560.3	45	2,443.8	44	22,908	45
39	42	DAI NIPPON PRINTING[2]	Japan	7,891.8	273.9	29	7,171.1	51	3,408.6	29	20,799	54
40	36	JAPAN TOBACCO[2,9]	Japan	7,769.1[4]	298.2[4]	27	11,308.8[4]	28	7,580.3[4]	6	26,700[4]	34
41	48	SSANGYONG	South Korea	7,421.8	171.9**	54	11,543.8	25	2,553.7	41	20,932	53
42	44	SUZUKI MOTOR[7]	Japan	7,403.9	50.2	117	4,702.0	77	1,283.7	71	23,544	44
43	49	FUJI PHOTO FILM[10]	Japan	7,367.7	650.2	11	9,280.8	34	5,754.7	13	19,677	59
44	46	TOPPAN PRINTING[2]	Japan	7,216.9	225.2	42	5,932.2	61	2,773.4	36	14,530	81
45	43	SNOW BRAND MILK PRODUCTS[2]	Japan	7,188.5	51.7	115	3,060.0	114	676.1	119	14,269	82
46	39	SUMITOMO CHEMICAL	Japan	6,938.0	253.1	34	7,497.6	46	1,455.1	66	12,537	89
47	61	KAWASAKI HEAVY INDUSTRIES[2]	Japan	6,905.6	90.6	88	7,490.0	47	705.9	113	19,747	58
48	51	SUMITOMO ELECTRIC INDUSTRIES[2]	Japan	6,878.1	179.2	52	5,737.0	62	2,055.8	51	27,044	32
49	50	MITSUBISHI METAL[2]	Japan	6,698.2[6]	88.2	93	5,508.9	65	810.3	105	11,281	92
50	47	MATSUSHITA ELECTRIC WORKS[5]	Japan	6,656.5	231.5	39	6,011.2	59	2,397.9	46	20,681	55
51	55	FLETCHER CHALLENGE[1]	New Zealand	6,571.7	407.1	23	8,076.1	43	2,237.6	49	37,000	24
52	•	POHANG IRON & STEEL	South Korea	6,538.9	214.3	46	13,125.9	24	6,685.4	10	22,518	46
53	69	NEWS CORP.[1]	Australia	6,453.0	949.5**	5	14,411.7	19	4,692.3	19	30,908	29
54	111	BOND CORP. HOLDINGS[1]	Australia	6,374.7	(795.4)‡	150	8,844.6	36	(87.6)	150	21,000	52
55	56	KOMATSU[2]	Japan	6,349.1	162.4	57	8,503.1	39	3,351.5	31	21,633	49
56	45	ISHIKAWAJIMA-HARIMA HEAVY IND.[2]	Japan	6,290.1	103.3	82	8,550.7	37	1,016.1	93	26,178	36
57	53	NIPPON MINING[2]	Japan	6,250.1[6]	105.6	81	7,048.1	52	1,108.6	85	11,351	91
58	54	TORAY INDUSTRIES[2]	Japan	6,250.0	260.9	31	7,284.5	49	2,630.0	39	26,211	35
59	63	HYUNDAI MOTOR	South Korea	5,845.1	62.1	106	5,502.1	66	1,217.9	76	40,300	22
60	60	RICOH[7]	Japan	5,779.5[6]	138.7	66	5,499.9	67	2,414.2	45	34,400	25
61	62	DAIHATSU MOTOR[2]	Japan	5,715.4	51.0	116	3,593.4	98	833.9	103	18,570	66
62	65	FURUKAWA ELECTRIC[2]	Japan	5,651.1	90.5	89	4,958.2	73	1,127.9	83	15,104	77
63	59	KUBOTA[2]	Japan	5,623.4[6]	143.6	65	6,268.6	57	2,356.2	48	17,500	70
64	68	DAINIPPON INK & CHEMICALS[2]	Japan	5,585.5	56.4	110	5,595.7	64	1,194.2	81	20,122	56
65	64	TAKEDA CHEMICAL[2]	Japan	5,454.0[6]	301.6	26	6,678.0	54	3,382.2	30	13,675	84
66	73	FUJI ELECTRIC[5]	Japan	5,369.1[7]	73.0	98	5,415.4	69	1,024.3	91	19,248	61
67	66	TOYO SEIKAN[2]	Japan	5,242.0	180.4	51	3,900.3	90	1,696.7	60	6,206	130
68	58	FUJI HEAVY INDUSTRIES[2]	Japan	5,188.4	52.3	114	5,492.3	68	2,013.4	52	18,700	65
69	70	KANEBO[2]	Japan	5,035.3[6]	33.5	128	4,761.0	75	131.2	149	25,465	37
70	79	SEKISUI CHEMICAL[2]	Japan	5,034.2	178.4	53	4,263.1	83	1,208.4	79	9,316	105
71	52	KIRIN BREWERY	Japan	4,971.0[6]	220.5	43	8,289.9	41	3,443.3	28	10,478	96
72	67	TONEN[11]	Japan	4,891.0	184.0	50	4,747.0	76	2,455.3	43	4,213	142
73	71	HYOSUNG	South Korea	4,782.4	21.5	140	3,601.5	96	1,021.6	92	24,800	40
74	74	OJI PAPER[2]	Japan	4,708.5	207.3	47	5,046.2	72	1,628.2	62	N.A.	427
75	80	NIPPON MEAT PACKERS[2]	Japan	4,640.1	89.8	91	2,712.5	121	972.1	98	14,836	80

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76	81	AISIN SEIKI[2]	Japan	4,633.3	92.5	86	3,084.5	112	1,276.5	72	13,568	85
77	77	UBE INDUSTRIES[2]	Japan	4,552.9	151.0	61	6,308.2	56	504.8	126	12,622	88
78	83	KAO[2]	Japan	4,490.4	135.5	67	4,015.1	86	1,761.0	58	12,900	87
79	86	HYUNDAI HEAVY INDUSTRIES	South Korea	4,428.9	94.3	85	5,303.7	70	1,614.5	63	50,000	17
80	75	TEIJIN[2]	Japan	4,424.4	158.1	58	6,263.8	58	1,842.3	54	11,013	94
81	91	OKI ELECTRIC INDUSTRY[2]	Japan	4,365.3[6]	118.8	76	4,391.8	79	1,115.4	84	18,440	67
82	94	HINO MOTORS[2]	Japan	4,203.3[4]	44.1[4]	122	2,115.8[4]	137	678.1[4]	118	8,053[4]	111
83	78	NIPPON SUISAN KAISHA[2]	Japan	4,181.2	21.1	141	2,303.4	133	618.6	122	5,168	134
84	57	SHOWA DENKO	Japan	4,165.5	53.6	113	4,445.1	78	886.4	101	6,246	128
85	93	NIPPON LIGHT METAL[2]	Japan	4,134.1	114.3	78	3,542.7	100	245.3	144	10,700	95
86	85	YAMAHA MOTOR[2]	Japan	4,126.8	49.5	118	3,594.0	97	548.4	125	9,925	101
87	87	AJINOMOTO[2]	Japan	4,110.1	121.6	75	5,282.4	71	2,465.9	42	9,532	104
88	72	CRA	Australia	4,026.7	514.0	16	6,336.5	55	3,186.5	32	21,185	51
89	89	TOYOBO[2]	Japan	3,957.8	55.9	111	3,703.9	95	682.9	116	15,020	79
90	90	JUJO PAPER[2]	Japan	3,935.3[6]	122.9	73	4,308.4	82	982.4	97	6,743	125
91	82	MITSUBISHI OIL[2]	Japan	3,910.0	66.8	101	4,339.4	81	493.6	131	3,340	145
92	76	GOLDSTAR	South Korea	3,863.0	26.7	135	3,465.7	102	756.8	112	33,000	27
93	92	YAMAHA[2]	Japan	3,793.7	28.1‡	133	3,420.2	103	1,092.0	86	17,136	71
94	98	MITSUI TOATSU CHEMICALS[2]	Japan	3,748.6	125.9	70	4,378.7	80	500.5	129	10,400	99
95	118	PACIFIC DUNLOP[1]	Australia	3,719.1	(81.1)‡	149	3,109.2	110	826.2	104	44,753	20
96	97	KONICA[12]	Japan	3,715.6	15.4	144	3,912.8	89	1,300.5	70	21,430	50
97	104	ASAHI BREWERIES	Japan	3,661.5	27.3	134	8,186.1	42	1,777.1	57	6,923	120
98	84	PETRONAS[2,9]	Malaysia	3,533.0	252.6‡	35	8,481.3	40	4,659.5	20	7,562	115
99	113	NISSHIN STEEL[2]	Japan	3,488.3	243.4	38	6,002.2	60	1,214.7	77	8,334	109
100	88	SUMITOMO RUBBER	Japan	3,481.4	48.0	119	3,108.2	111	348.8	141	20,000	57
101	105	SANYO-KOKUSAKU PULP[2]	Japan	3,455.0	83.1	95	3,192.1	108	854.3	102	7,719	114
102	115	TOYODA AUTOMATIC LOOM WORKS[2]	Japan	3,454.8[4]	99.9[4]	83	2,341.2[4]	131	1,173.4[4]	82	6,837[4]	122
103	103	HONSHU PAPER[2]	Japan	3,380.9	29.9	130	3,730.6	94	397.4	137	7,546	116
104	106	SANKYO[2]	Japan	3,376.0	107.9	80	3,065.9	113	1,329.3	69	5,979	131
105	99	PIONEER ELECTRONIC[2]	Japan	3,327.7[3]	144.6[3]	64	2,434.6	130	1,415.4	67	12,919	86
106	112	DAIDO STEEL[2]	Japan	3,258.4	57.1	109	3,057.6	115	794.3	108	10,445	97
107	95	TDK[2]	Japan	3,252.9[3]	164.8[3]	56	3,767.3	93	2,153.3	50	19,361	60
108	100	MITSUBISHI PETROCHEMICAL[2]	Japan	3,209.1[3]	203.8[3]	48	4,057.2	85	983.8	96	3,770	143
109	117	ITOHAM FOODS[2]	Japan	3,198.2[3]	53.9[3]	112	1,690.1	143	783.2	109	6,746	124
110	102	SHISEIDO[2]	Japan	3,190.5[3]	81.5[3]	97	3,954.7	87	1,865.6	53	19,000	64
111	133	SHIN-ETSU CHEMICAL[2]	Japan	3,183.3	216.3	44	3,528.5	101	1,244.9	74	10,419	98
112	109	MEIJI MILK PRODUCTS[2]	Japan	3,145.7	24.2	137	1,313.2	147	393.7	139	7,500	117
113	96	YAMAZAKI BAKING	Japan	3,125.0[6]	71.6	99	1,859.1	140	954.3	99	16,410	75
114	116	ONODA CEMENT[2]	Japan	3,089.4	90.5	90	3,871.5	92	699.0	114	6,890	121
115	110	TOYO SASH[2]	Japan	3,040.2[3]	165.9[3]	55	3,050.6	116	1,267.5	73	8,588	107
116	107	HONAM OIL REFINERY	South Korea	3,029.9	39.5	126	1,913.1	139	385.1	140	2,048	146
117	143	BORAL[1]	Australia	2,975.4	252.1	36	2,573.1	125	1,214.6	78	25,000	38
118	114	ALPS ELECTRIC[2]	Japan	2,955.2	42.0	124	2,917.4	117	993.0	95	14,157	83
119	127	OMRON[2,13]	Japan	2,903.3	147.8[*6]	62	2,752.0	120	1,367.0	68	15,047	78
120	140	SUMITOMO HEAVY INDUSTRIES[2]	Japan	2,897.0	32.7	129	3,574.9	99	500.7	128	10,000	100
121	129	DAISHOWA PAPER[2]	Japan	2,857.5	62.6	105	4,930.7	74	446.3	133	7,741	113
122	121	NISSHIN FLOUR MILLING[2]	Japan	2,841.9	59.7	108	1,559.6	144	642.5	120	4,345	141
123	149	CSR[2]	Australia	2,827.8	250.5	37	4,132.8	84	1,822.4	55	18,266	68
124	108	NISSAN SHATAI[2]	Japan	2,789.5[4]	17.1[4]	143	1,065.8[4]	148	459.9[4]	132	5,078[4]	139
125	132	KYOCERA[2]	Japan	2,724.9	230.6	40	3,927.7	88	2,744.0	38	19,192	62

The definitions and concepts underlying the figures in this directory are explained on page 106. Footnotes appear on page 105.

RANK 1989	RANK 1988	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank
126	131	MITSUBISHI MINING & CEMENT[2]	Japan	2,702.2	38.7	127	3,276.8	107	568.5	124	6,459	127
127	119	YOKOHAMA RUBBER	Japan	2,628.0	64.3	104	2,695.0	122	397.1	138	11,073	93
128	124	KANTO AUTO WORKS[2]	Japan	2,617.5[4]	24.6[4]	136	782.8[4]	150	203.5[4]	147	5,877[4]	132
129	123	MORINAGA MILK INDUSTRY[2]	Japan	2,616.0	29.8	131	1,378.5	146	418.8	134	4,930	140
130	122	UNITIKA[2]	Japan	2,608.2	28.7	132	2,468.9	126	206.0	146	6,208	129
131	146	DOOSAN	South Korea	2,568.6	23.7	139	2,632.7	124	617.4	123	16,540	74
132	134	NIPPON SEIKO[2]	Japan	2,548.9[3]	86.1[3]	94	3,309.2	106	1,552.6	65	11,941	90
133	•	GOODMAN FIELDER WATTIE[1]	Australia	2,544.8	258.7[**]	32	3,134.3	109	1,044.9	90	25,000	39
134	•	NISSAN DIESEL MOTOR[2]	Japan	2,544.7	14.7	146	2,463.0	127	401.3	136	5,105	138
135	120	PIONEER INTERNATIONAL[1]	Australia	2,528.5	125.4[‡]	71	2,652.9	123	1,081.7	89	9,897	102
136	126	MITSUI MINING & SMELTING[2]	Japan	2,479.0	44.5	121	2,755.5	119	181.0	148	6,614	126
137	138	TOYOTA AUTO BODY[2]	Japan	2,477.7[4]	20.8[4]	142	868.6[4]	149	235.3[4]	145	7,124[4]	118
138	128	TOTO[2]	Japan	2,471.6[3,4]	126.5[3,4]	69	2,132.7[4]	136	1,012.3[4]	94	9,136[4]	106
139	101	GENERAL SEKIYU[2]	Japan	2,455.2	64.3	103	2,246.3	134	679.8	117	N.A.	462
140	•	DAIKIN INDUSTRIES[2]	Japan	2,411.1	88.7	92	1,819.9	142	693.6	115	8,300	110
141	137	MINOLTA CAMERA[2]	Japan	2,406.6	15.2	145	2,453.5	129	796.0	106	17,000	72
142	142	KURARAY[2]	Japan	2,401.5	41.0	125	2,461.9	128	403.9	135	6,800	123
143	148	MITSUI PETROCHEMICAL INDUSTRIES[2]	Japan	2,382.7	128.6	68	3,353.1	105	779.6	110	5,144	136
144	147	CITIZEN WATCH[2]	Japan	2,344.5	65.2	102	2,187.2	135	904.8	100	16,673	73
145	141	MITSUBISHI RAYON[2]	Japan	2,342.3	43.1	123	2,798.4	118	795.1	107	7,069	119
146	139	MEIJI SEIKA[2]	Japan	2,312.3	24.1	138	1,521.7	145	763.9	111	5,160	135
147	144	SHIONOGI[2]	Japan	2,310.3	91.3	87	2,315.7	132	1,219.2	75	8,454	108
148	125	LION	Japan	2,288.9	14.4	147	1,820.1	141	641.4	121	5,133	137
149	•	NINTENDO[14]	Japan	2,253.5	257.9	33	1,930.0	138	1,087.5	87	1,207	147
150	•	YOSHIDA KOGYO[2]	Japan	2,226.1	112.2	79	3,873.3	91	1,195.9	80	15,880	76
		TOTALS		1,132,533.9	33,075.6		1,176,856.1		357,026.2		3,917,526	

Change in Sales

10 biggest increases

	Sales rank	1988-89
BOND CORP. HOLDINGS	54	131.2%
SONY	14	64.6
GOODMAN FIELDER WATTIE	133	61.9
CSR	123	48.5
NEWS CORP.	53	47.2
BORAL	117	47.1
NINTENDO	149	45.9
PACIFIC DUNLOP	95	42.7
KAWASAKI HEAVY INDUSTRIES	47	42.0
SUMITOMO HEAVY INDUSTRIES	120	40.4

5 biggest decreases

GENERAL SEKIYU	139	19.6%
SHOWA DENKO	84	16.1
KIRIN BREWERY	71	10.4
CRA	88	3.3
PETRONAS	98	2.8

Change in Profits†

10 biggest increases

	Sales rank	1988-89
TAIYO FISHERY	34	6208.7%
ISHIKAWAJIMA-HARIMA HEAVY IND.	56	2642.6
SUMITOMO METAL INDUSTRIES	28	2078.3
SUMITOMO HEAVY INDUSTRIES	120	926.4
NISSAN DIESEL MOTOR	134	615.9
KAWASAKI STEEL	31	501.1
NKK	20	483.7
KOBE STEEL	25	468.8
OKI ELECTRIC INDUSTRY	81	372.8
NIPPON LIGHT METAL	85	288.9

5 biggest decreases

BRIDGESTONE	18	78.0%
PETRONAS	98	71.5
SHOWA DENKO	84	62.5
YAMAHA	93	53.1
SHOWA SHELL SEKIYU	35	46.1

†Listings exclude companies that lost money in 1988.

Footnotes to the industrials

1 Figures are for fiscal year ended June 30, 1989.
2 Figures are for fiscal year ended March 31, 1989.
3 Figure is a FORTUNE estimate.
4 Figures are unconsolidated.
5 Figures are for fiscal year ended November 30, 1989.
6 Excludes some some subsidiaries more than 50% owned.
7 Figures are for fiscal year ended October 31, 1989.
8 Figures are for fiscal year ended May 31, 1989.
9 Government-owned.
10 Figures are for fiscal year ended October 20, 1989.
11 Name changed from Toa Nenryo Kogyo KK.
12 Figures are for fiscal year ended April 20, 1989.
13 Name changed from Omron Tateisi Electronics.
14 Figures are for fiscal year ended August 31, 1989.

Notes to the Pacific Rim Industrial Companies

Sales

All companies on the list must have derived more than 50% of their sales from manufacturing and/or mining. Sales do not include excise taxes or customs duties levied according to either volume or value sales, and so the figures for some companies—most of which sell gasoline, liquor, or tobacco—may be lower than those published by the companies themselves. Unless otherwise noted, figures exclude intracompany transactions and include consolidated subsidiaries more than 50% owned, either fully or on a prorated basis. Figures have been converted to dollars using an exchange rate that consists of the official average rate during each company's fiscal year (ended December 31, 1989, unless otherwise noted).

Profits

Profits are shown after taxes, minority interests, and extraordinary items. Figures have been converted to dollars using an exchange rate that consists of the official average rate during each company's fiscal year (ended December 31, 1989, unless otherwise noted).

Assets

Totals shown at each company's year-end. Figures have been converted to dollars at the official exchange rate at each company's year-end.

Stockholders' equity

Stockholders' equity is shown at each company's year-end. Minority interest is not included. Figures have been converted to dollars at the official exchange rate at each company's year-end.

Employees

The figure shown is either a year-end or yearly average number as published.

The Industrials by Country

	1-50	51-100	101-150	Total	Largest company	1989 sales in millions	Rank
AUSTRALIA	2	4	4	10	ELDERS IXL	$10,338.7	22
JAPAN	43	39	44	126	TOYOTA MOTOR	$60,443.6	1
MALAYSIA	0	1	0	1	PETRONAS	$3,533.0	98
NEW ZEALAND	0	1	0	1	FLETCHER CHALLENGE	$6,571.7	51
SOUTH KOREA	4	5	2	11	SAMSUNG	$35,189.1	5
TAIWAN	1	0	0	1	CHINESE PETROLEUM	$8,008.2	37

Index to the Companies

	Sales rank		Sales rank		Sales rank		Sales rank
AISIN SEIKI	76	HONDA MOTOR	7	MITSUBISHI RAYON	145	SHIN-ETSU CHEMICAL	111
AJINOMOTO	87	HONSHU PAPER	103	MITSUI MINING & SMELTING	136	SHIONOGI	147
ALPS ELECTRIC	118	HYOSUNG	73	MITSUI PETROCHEMICAL IND.	143	SHISEIDO	110
ASAHI BREWERIES	97	HYUNDAI HEAVY INDUSTRIES	79	MITSUI TOATSU CHEMICALS	94	SHOWA DENKO	84
ASAHI CHEMICAL INDUSTRY	38	HYUNDAI MOTOR	59	MORINAGA MILK INDUSTRY	129	SHOWA SHELL SEKIYU	35
ASAHI GLASS	36	IDEMITSU KOSAN	19	NEC	8	SNOW BRAND MILK PRODUCTS	45
BOND CORP. HOLDINGS	54	ISHIKAWAJIMA-HARIMA HEAVY IND.	56	NEWS CORP.	53	SONY	14
BORAL	117	ISUZU MOTORS	26	NINTENDO	149	SSANGYONG	41
BRIDGESTONE	18	ITOHAM FOODS	109	NIPPONDENSO	27	SUMITOMO HEAVY INDUSTRIES	120
BROKEN HILL PROPRIETARY	30	JAPAN TOBACCO	40	NIPPON LIGHT METAL	85	SUMITOMO METAL INDUSTRIES	28
CANON	23	JUJO PAPER	90	NIPPON MEAT PACKERS	75	SUMITOMO ELECTRIC INDUSTRIES	48
CHINESE PETROLEUM	37	KANEBO	69	NIPPON MINING	57	SUMITOMO CHEMICAL	46
CITIZEN WATCH	144	KANTO AUTO WORKS	128	NIPPON OIL	17	SUMITOMO RUBBER	100
COSMO OIL	29	KAO	78	NIPPON SEIKO	132	SUNKYONG	32
CRA	88	KAWASAKI HEAVY INDUSTRIES	47	NIPPON SUISAN KAISHA	83	SUZUKI MOTOR	42
CSR	123	KAWASAKI STEEL	31	NIPPON STEEL	10	TAIYO FISHERY	34
DAEWOO	11	KIRIN BREWERY	71	NISSAN DIESEL MOTOR	134	TAKEDA CHEMICAL	65
DAIDO STEEL	106	KOBE STEEL	25	NISSAN MOTOR	4	TDK	107
DAIHATSU MOTOR	61	KOMATSU	55	NISSAN SHATAI	124	TEIJIN	80
DAIKIN INDUSTRIES	140	KONICA	96	NISSHIN FLOUR MILLING	122	TONEN	72
DAINIPPON INK & CHEMICALS	64	KUBOTA	63	NISSHIN STEEL	99	TOPPAN PRINTING	44
DAI NIPPON PRINTING	39	KURARAY	142	NKK	20	TORAY INDUSTRIES	58
DAISHOWA PAPER MFG.	121	KYOCERA	125	OJI PAPER	74	TOSHIBA	6
DOOSAN	131	LION	148	OKI ELECTRIC INDUSTRY	81	TOTO	138
ELDERS IXL	22	MATSUSHITA ELECTRIC INDUSTRIAL	3	OMRON	119	TOYOBO	89
FLETCHER CHALLENGE	51	MATSUSHITA ELECTRIC WORKS	50	ONODA CEMENT	114	TOYODA AUTOMATIC LOOM WORKS	102
FUJI ELECTRIC	66	MAZDA MOTOR	15	PACIFIC DUNLOP	95	TOYO SASH	115
FUJI HEAVY INDUSTRIES	68	MEIJI MILK PRODUCTS	112	PETRONAS	98	TOYO SEIKAN	67
FUJI PHOTO FILM	43	MEIJI SEIKA	146	PIONEER ELECTRONIC	105	TOYOTA AUTO BODY	137
FUJITSU	12	MINOLTA CAMERA	141	PIONEER INTERNATIONAL	135	TOYOTA MOTOR	1
FURUKAWA ELECTRIC	62	MITSUBISHI ELECTRIC	9	POHANG IRON & STEEL	52	UBE INDUSTRIES	77
GENERAL SEKIYU	139	MITSUBISHI HEAVY INDUSTRIES	16	RICOH	60	UNITIKA	130
GOLDSTAR	92	MITSUBISHI KASEI	33	SAMSUNG	5	YAMAHA	93
GOODMAN FIELDER WATTIE	133	MITSUBISHI METAL	49	SANKYO	104	YAMAHA MOTOR	86
HINO MOTORS	82	MITSUBISHI MINING & CEMENT	126	SANYO ELECTRIC	21	YAMAZAKI BAKING	113
HITACHI	2	MITSUBISHI MOTORS	13	SANYO-KOKUSAKU PULP	101	YOKOHAMA RUBBER	127
HONAM OIL REFINERY	116	MITSUBISHI OIL	91	SEKISUI CHEMICAL	70	YOSHIDA KOGYO	150
HONDA MOTOR	7	MITSUBISHI PETROCHEMICAL	108	SHARP	24		